Cisco IP Telephony Statistics Report Pack

Software Version: 3.1

HP OpenView Performance Insight

User Guide

June 2005

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1 Overview

This chapter covers the following topics:

- OVPI and Cisco Gateway Statistics
- Folders and Reports
- Integration with NNM
- Ways to Customize Reports
- Package Version History
- Sources for Additional Information

OVPI and Cisco Gateway Statistics

HP OpenView Performance Insight (OVPI) is a performance management and reporting application. Long-term data collection, in-depth analysis, and automated web-based reporting are this application's primary strengths. If desired, OVPI can be integrated with network management and system management applications, including NNM and OVO. Integration with these other systems will enhance your ability to isolate faults, diagnose problems, and anticipate capacity issues.

The Cisco IP Telephony Statistics Report Pack installs on OVPI. Cisco IP Telephony Statistics automates Cisco CallManager reporting. The reports in this package analyze call volume and resource usage by tracking the following metrics:

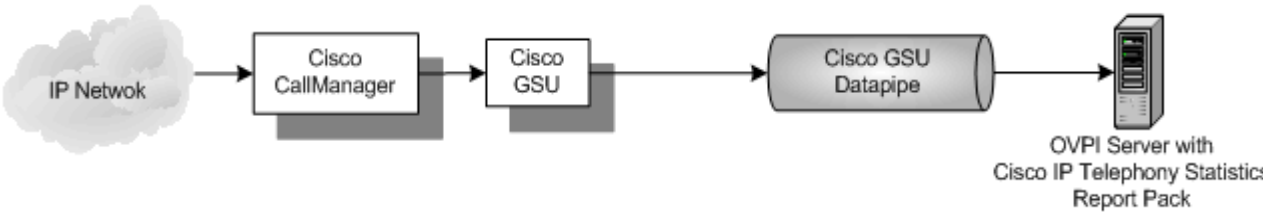
- CAS channel usage
- PRI channel usage
- FXO port usage
- FXS port usage
- Total call volume handled by an instance of a CallManager
- Time spent in different states by channels of a given gateway

Gateway Support

Cisco GSU (Gateway Statistics Utility) is a drop-in module for CiscoWorks IP Telephony Environment Monitor. Although Cisco GSU collects performance statistics for Media Gateway Control Protocol (MGCP) gateways and Cisco IOS (H323) gateways, the current version of Cisco IP Telephony Statistics supports MGCP gateways only.

Data Flow

Output from the Cisco GSU is reformatted by a preprocessor. The preprocessor is part of the Cisco GSU Datapipe. After the preprocesssor reformats output from the Cisco GSU, OVPI uses the Cisco GSU Datapipe to import the results. The figure below shows a Cisco CallManager, a Cisco GSU, the Cisco GSU Datapipe, and an OVPI server running the Cisco IP Telephony Statistics Report Pack.



Folders and Reports

If the OPVI application clients are installed on your system, you can access the reports in Cisco IP Telephony Statistics by opening the Management Console and navigating the object model. If you are accessing reports on the web, you will see the following folders:

- CallManager Cluster
- CallManager
- Gateway
- Location

Each folder contains a mix of summary reports, top ten reports, and forecast reports. The following table provides a list of the reports in each folder.

Folder	Reports
CallManager	1 CallManager CAS Channel Activity Summary 2 CallManager Call Activity Summary 3 CallManager Call Activity Top Ten 4 CallManager FXO Port Activity Summary 5 CallManager FXS Port Activity Summary 6 CallManager Forecast 7 CallManager PRI Channel Activity Summary 8 CallManager Port Utilization Top Ten
CallManager Cluster	1 Cluster Busy Hour Utilization Correlation 2 Cluster CAS Channel Activity Summary 3 Cluster Call Activity Summary 4 Cluster Call Activity Top Ten 5 Cluster FXO Port Activity Summary 6 Cluster FXS Port Activity Summary

Folder	Reports
	7 Cluster Forecast 8 Cluster PRI Channel Activity Summary 9 Cluster Peak Utilization Correlation 10 Cluster Port Utilization Top Ten
Gateway	1 DS0 Usage Summary 2 DS1 Usage Summary 3 Gateway CAS Channel Activity Summary 4 Gateway FXO Port Activity Summary 5 Gateway FXS Port Activity Summary 6 Gateway Forecast 7 Gateway PRI Channel Activity Summary
Location	1 Channel Usage Summary by Location 2 DS1 Usage Correlation by Location 3 Gateway Forecast by Location 4 Gateway Summary by Location 5 Location Forecast 6 Location Summary 7 Location/Gateway Top Ten

Top Ten reports perform a ranking function. They make it easy for you to locate heavily used CallManagers, CallManager Clusters, gateways, and locations based on yesterday's resource utilization levels.

Summary reports provide historical data for groups of devices organized by CallManager Cluster, CallManager, gateway, DS1 and other user-defined groups. Use these reports to find out whether recent high usage is a temporary event or a longer-term trend that may require corrective action.

Forecast reports show estimates for future utilization. These reports highlight items that are trending toward over-utilization or under-utilization. Use these reports to find out which CallManager Clusters, CallManagers, gateways, and locations will be over-utilized or under-utilized in the near future.

Integration with NNM

If NNM and OVPI are integrated, you should install the optional thresholds sub-package that comes with IP Telephony Statistics. The optional thresholds sub-package configures the Thresholds Module to detect threshold conditions and to respond to the threshold condition by taking an action. The default action is to send a breach trap to NNM. The breach trap received by NNM becomes an alarm in the NNM alarm browser, which the NNM operator can respond to by highlighting the alarm and launching a Near Real Time report.

If your NNM server is the correct destination for breach traps, configuring the Thresholds Module is not necessary. You do not need to define an action or specify a destination for breach traps. However, you are free to modify category, severity, and destination parameters at any

time. For details about these options, refer to the *Thresholds Module 5.0 User Guide*. For details about integrating NNM and OVPI, refer to the *NNM/OVPI Integration Module 2.0 User Guide*.

Ways to Customize Reports

You can change the contents of a report by applying group filters, by applying constraints, and by selecting a different view option for individual tables and graphs. For details about view options for tables and graphs, see Appendix A, Editing Tables and Graphs.

Applying Group Filters

If you intend to share reports with external customers, you must configure OVPI to produce customer-specific reports. Creating customer-specific reports involves the following tasks:

- Importing customer names and device locations using Common Property Tables
- Creating a group account for all of the users affiliated with a particular customer
- Creating a group filter for the group account

For more information about using group filters, refer to the *OVPI 5.1 Administration Guide.*

Applying Constraints

A constraint eliminates the data you are not interested in seeing. Apply a constraint is the same as editing a parameter. If you edit the Gateway parameter, data for all gateways except the gateway you typed in the Gateway field drops from the report. If you edit Gateway Location, data for all locations except the location you typed in the Gateway Location field drops from the report. You may apply multiple constraints at once. Cisco IP Telephony Statistics 3.0 supports the following parameters:

- CallManager Cluster Name
- CallManager Name
- Gateway Name
- Gateway Location

If you are using the Web Access Server to view reports from a web browser, edit parameters by clicking the edit parameters icon at the bottom right-hand corner of the report. When the Edit Parameters window opens, enter the constraint in the field and click **Submit.**

If you are using Report Viewer, select **Edit > Parameter Values** from the menu bar. When the Modify Parameter Values window opens, click the **Current Value** field. Type a new value and click **OK**.

Package Version History

The following table outlines recent changes to the Cisco IP Telephony Report Pack.

Version	Release Date	Features/Enhancements
1.0	May 2003	32 reports Cisco GSU Datapipe 1.0
2.0	October 2003	OVPI Object Manager support *new datapipe:* Cisco GSU Datapipe 2.0 *new change forms:* • Configure a New CallManager Cluster • Assign CallManagers to Clusters • Configure Gateway Thresholds • Configure CallManager Thresholds • Configure Channel/Port Thresholds
2.0	April 2004	OVPI 5.0 support
3.0	August 2004	Oracle support *new datapipe:* Cisco GSU Datapipe 3.0
3.0	November 2004	No changes
3.1	June 2005	*new upgrade packages:* • UPGRADE_Cisco_IP_Telephony_Statistics_to_31 • UPGRADE_Cisco_IPT_Statistics_Location_to_3 *new datapipe:* Cisco GSU Datapipe 3.1

Sources for Additional Information

This user guide contains samples of some of the reports in the package. The demo package that comes with Cisco IP Telephony Statistics contains a sample of every report in the package. If you have access to the demo package, and you want to know what fully-populated reports look like, install the demo package. Like real reports, demo reports are interactive. Unlike real reports, demo reports are static.

For details about the latest enhancements and known problems, refer to:

Cisco IP Telephony Statistics Report Pack 3.1 Release Statement

You may also be interested in the following documents:

- *Common Property Tables 3.5 User Guide*
- *IP Telephony Call Detail Report Pack 2.0 User Guide*
- *OVPI Report Packs, Version 8.0: Release Notes, June 2005*

Manuals for the core product, OVPI, and manuals for the reporting solutions and shared packages that run on OVPI, can be downloaded from this site:

http://www.managementsoftware.hp.com

Select **Support** > **Product Manuals** to reach the **Product Manuals Search** page. The user guides for OVPI are listed under **Performance Insight**. The user guides for report packs and datapipes are listed under **Performance Insight Reporting Solutions**.

The manuals listed under **Performance Insight Reporting Solutions** indicate the month and year of publication. If a manual is revised and reposted, the date of publication will change even if the software version number does not change. Since we post revised manuals on a regular basis, we recommend that you search this site for updates before using an older manual that might not be the latest version available.

2 The Upgrade Install

This chapter covers the following topics:

- Guidelines for a Smooth Upgrade
- Upgrading to Version 3.1
- Package Removal

Guidelines for a Smooth Upgrade

When you insert the June 2005 report pack CD in the CD-ROM drive and launch the package extraction program, the install script extracts every package from the CD and copies the results to the Packages directory on your system. When the extract finishes, the install script prompts you to start Package Manager.

Upgrading to IP Telephony Statistics 3.1 is easy and straightforward:

- Install the “to_31” upgrade for IP Telephony Statistics (the main package)
- Install the “to_3” upgrade for the location sub-package
- Remove the old datapipe, Cisco GSU Datapipe 2.0
- Install the latest datapipe, Cisco GSU Datapipe 3.1

Before running Package Manager, review the following guidelines.

Prerequisites

Make sure the following software is already installed before upgrading to version 3.1:

- OVPI 5.0 or higher
- All service packs available for the version of OVPI (5.0 or 5.1) you are running
- Common Property Tables 3.5

Common Property Tables

If you are running an earlier version of Common Property Tables, upgrade your current version to version 3.5. Do this before upgrading the report pack. When you install the “to_3.5” upgrade package, do not install anything else. Install the upgrade package for Common Property Tables and *only* the upgrade package for Common Property Tables.

Datapipes and Remote Pollers

Upgrading a report pack usually entails uninstalling one or more datapipes. When you uninstall an existing datapipe, the following information is lost:

- Single polling policy for a remote poller
- Cloned polling policies for multiple remote pollers
- Customized polling groups

To prevent this information from being lost, you can export existing polling policy configurations and customized polling groups by using the following commands:

- collection_manager
- group_manager

Exporting Polling Policy Configurations

If your environment contains polling policies for remote pollers, use the collection_manager command to export existing policy configurations to a file.

UNIX: As user trendadm, run the following command:

```
cd $DPIPE_HOME

./bin/collection_manager -export -file /tmp/savePollingPolicy.lst
```

Windows: As Administrator, launch a command window. Navigate to the OVPI install directory and execute the following command:

```
bin\collection_manager -export -file \temp\savePollingPolicy.lst
```

Exporting Polling Group Configurations

If your environment contains customized polling groups, use the group_manager command to export groups to individual .xml files.

UNIX: As user trendadm, execute the following command:

```
cd $DPIPE_HOME

./bin/group_manager -export_all -outfile /tmp/savePollingGroups
```

Windows: As Administrator, launch a command window, then navigate to the OVPI install directory and execute the following command:

```
bin\group_manager -export_all -outfile \temp\savePollingGroups
```

Custom Table Views

If you created custom views for data or property tables, the views you created may interfere with the report pack upgrade process, causing the process to fail. Whether or not your custom views interfere with the upgrade process depends on how you created them. If you created them using SQL, the upgrade will succeed but your custom views will not be available once the upgrade is complete. If you created them using Datapipe Manager, the upgrade is likely to fail. To prevent the upgrade from failing, delete your custom views before upgrading the report pack. After the upgrade is complete, recreate these views.

Distributed Environments

If your system is distributed, every server must be running the same version of OVPI and all available Service Packs for that version of OVPI. Following is an overview of the upgrade install for a distributed environment:

1. Disable trendcopy on the central server.
2. At the central server, install these packages:
   - UPGRADE_Common_Property_Tables_to_35; deploy reports
   - UPGRADE_Cisco_IP_Telephony_Statistics_to_31; deploy reports
   - UPGRADE_Cisco_IPT_Statistics_Location_to_3; deploy reports
3. At each satellite server, install these packages:
   - UPGRADE_Common_Property_Tables_to_35; deploy reports
   - UPGRADE_Cisco_IP_Telephony_Statistics_to_31; deploy reports.
   - Remove Cisco GSU Datapipe 2.0.
   - Install Cisco GSU Datapipe 3.1.
4. Re-enable trendcopy on the central server.

When you installed Cisco IP Telephony Statistics for the first time, you set up connections with satellite server databases, configured trendcopy pull commands, and switched off aggregations at each satellite server. If you recently upgraded from OVPI 4.6 to OVPI 5.0 or OVPI 5.1, the following configuration changes, which you made the first time shortly after you installed Cisco IP Telephony Statistics the first time, must be redone:

- Setting up connections with satellite server databases (using the Add Database Wizard)
- Configuring trendcopy pull commands

For details, see Chapter 5, Setting Up a Distributed System.

Upgrading to Version 3.1

Perform the following tasks to upgrade to version 3.1:

- Task 1: Stop OVPI Timer and extract packages from the report pack CD
- Task 2: If necessary, upgrade Common Property Tables to version 3.5
- Task 3: Install two packages:
  - UPGRADE_Cisco_IP_Telephony_Statistics_to_31; deploy reports
  - UPGRADE_Cisco_IPT_Statistics_Location_to_3; deploy reports
- Task 4: Remove Cisco GSU Datapipe 2.0
- Task 5: Install Cisco GSU Datapipe 3.1
- Task 6: Restart OVPI Timer

Task 1: Stop OVPI Timer and extract packages from the report pack CD

1. Log in to the system. On UNIX systems, log in as root.
2. Stop OVPI Timer and wait for processes to terminate.

Windows: Select **Settings > Control Panel > Administrative Tools > Services**

UNIX: As root, type one of the following:

HP-UX: **`sh /sbin/ovpi_timer stop`**

Sun: **`sh /etc/init.d/ovpi_timer stop`**

3 Insert the report pack CD in the CD-ROM drive. On Windows, a Main Menu displays automatically; on UNIX, mount the CD, navigate to the top-level directory for the CD drive, and type the setup command.

4 Select OVPI report packs by typing **1** in the choice field and pressing Enter. The install script displays a percentage complete bar. When extraction finishes, the install script starts Package Manager. The Package Manager welcome window opens.

When the extract finishes, you have the option of navigating to the to the Packages directory on your system to see the results. These are the folders beneath the IP_Telephony folder:

- Docs
- Gateway_Statistics.ap
- Gateway_Statistics_Demo.ap
- Gateway_Statistics_Location.ap
- Gateway_Statistics_Thresholds.ap
- IPT_Admin.ap
- IPT_CallDetails.ap
- IPT_CallDetails_Demo.ap
- IPT_CallDetails_Location.ap
- IPT_CallDetails_Thresholds.ap
- NNM_Utils

Under Cisco GSU Datapipe, you will see the following folder:

- CiscoGSU_Datapipe.ap

Task 2: Upgrade to Common Property Tables 3.5

If you are running an earlier version of Common Property Tables, upgrade to Common Property Tables 3.5. If you are not running any version of Common Property Tables, skip this task. If you are upgrading, observe these rules:

- Do not install any other package with the upgrade package; install the upgrade package for Common Property Tables upgrade package and *only* the upgrade package for Common Property Tables.
- When prompted to accept or disable the option to Deploy Reports, accept the default. If you disable the default, the forms that come with Common Property Tables will not be deployed.
- When the install finishes, click **Done** to return to the Management Console.

If you need help with the upgrade, refer to the *Common Property Tables 3.5 User Guide*.

Task 3: Upgrade Cisco IP Telephony Statistics

1. Start Package Manager. The Package Manager welcome window opens.
2. Click **Next**. The Package Location window opens.
3. Click **Install.** Approve the default installation directory or select a different directory if necessary.
4. Click **Next**. The Report Deployment window opens; accept the default for Deploy Reports and enter your username and password for the OVPI Application Server.
5. Click **Next**. The Package Selection window opens.
6. Click the check box next to the following packages:
   - *UPGRADE_Cisco_IP_Telephony_Statistics_to_31*
   - *UPGRADE_Cisco_IPT_Statistics_Location_to_3*
7. Click **Next**. The Type Discovery window opens. Disable the default and click **Next**. The Selection Summary window opens.
8. Click **Install**. The Installation Progress window opens; when installation is complete, a package installation complete message appears.
9. Click **Done** to return to the Management Console.

Task 4: Remove the Cisco GSU Datapipe 2.0

1. Start Package Manager. The Package Manager welcome window opens.
2. Click **Next**. The Package Location window opens.
3. Click **Uninstall.**
4. Click **Next**. The Report Undeployment window opens.
5. Click **Next**. The Package Selection window opens.
6. Click the check box next to the following package:
   - *CiscoGSU_Datapipe 2.0*
7. Click **Next**. The Selection Summary window opens.
8. Click **Uninstall**. The Progress window opens. When the uninstall process is complete, a package removal complete message appears.
9. Click **Done**.

Task 5: Install the Cisco GSU Datapipe 3.1

1. Start Package Manager. The Welcome window opens.
2. Click **Next**. The Package Location window opens.
3. Click **Install**.
4. Click **Next**. The Report Deployment window opens. Disable the default for Deploy Reports and click **Next**. The Package Selection window opens.
5. Click the check box next to the following package:
   - *CiscoGSU_Datapipe 3.1*
6. Click **Next**. The Type Discovery window opens. Disable the default and click **Next**. The Selection Summary window opens.

7 Click **Install.** The Installation Progress window opens. When the installation finishes, a package installation complete message appears.

8 Click **Done**.

Restart OVPI Timer.

Windows:

Do the following:

a From the Control Panel, select **Administrative Tools > Services**

b Select OVPI Timer from the list of services.

c From the Action menu, select **Start**.

UNIX:

As root, do one of the following:

— HP-UX: **`sh /sbin/ovpi_timer start`**

— Sun: **`sh /etc/init.d/ovpi_timer start`**

3 The New Install

This chapter covers the following topics:

- Guidelines for a smooth installation
- Prerequisites related to OVPI and Cisco
- Installing IP Telephony Statistics 3.1
- Accessing deployed reports; new objects in the object model
- Package removal

Guidelines for a Smooth Install

The reporting solutions that run on OVPI consist of two packages, a report pack and a datapipe. Some report packs use multiple datapipes. When you install a datapipe, you configure OVPI to collect a specific type of performance data at a specific interval. When you install a report pack, you configure OVPI to summarize and aggregate the data collected by the datapipe.

The June 2005 report pack CD contains the latest report packs and datapipes. When you insert the May 2005 report pack CD in the CD-ROM drive and launch the package extraction program, the install script extracts every package on the CD to the Packages directory on your system. When the extract finishes, the install script prompts you to start Package Manager. Review the following guidelines before using Package Manager.

Prerequisites

Cisco IP Telephony Statistics 3.1 has the following prerequisites:

- OVPI 5.0 or higher
- All service packs available for the version of OVPI (5.0 or 5.1) you are running
- A functioning CallManager environment (Cisco CallManager 3.3 or 4.0)
- MGCP gateways
- Cisco GSU 1.0 or Cisco GSU 2.0

The Cisco IP Telephony Statistics Report Pack shares property data with the IP Telephony Call Detail Report Pack. Sharing property data eliminates duplication and simplifies administration. However, since these report packs operate independently, installing both packages is not necessary.

Upgrading Common Property Tables

If you are running an earlier version of Common Property Tables, upgrade to version 3.5. If you are not running any version of Common Property Tables, Package Manager will install the latest version of Common Property Tables for you, automatically.

Do not install the "to_3.5" upgrade package for Common Property Tables *and* other packages at the same time. Install the upgrade package for Common Property Tables and *only* the upgrade package for Common Property Tables. For more information about installing and using Common Property Tables, refer to the *Common Property Tables 3.5 User Guide*.

Distributed Environments

If you intend to run Cisco IP Telephony Statistics in a distributed environment, the installation procedure is more complicated. Here is an outline of the steps involved when installing Cisco IP Telephony Statistics in a distributed environment:

1. Verify that every server is running the same version of OVPI and all service packs available for that version.
2. Install Cisco IP Telephony Statistics on the central server:
   a. Disable trendcopy.
   b. If necessary, upgrade to Common Property Tables 3.5; deploy reports (forms).
   c. Install two packages:
      — Cisco IP Telephony Statistics 3.1; deploy reports
      — Cisco IPT Statistics Location 3.0; deploy reports
3. Install Cisco IP Telephony Statistics on each satellite server:
   a. If necessary, upgrade to Common Property Tables 3.5; deploy reports (forms)
   b. Install Cisco IP Telephony Statistics 3.1; deploy reports
   c. Install the Cisco GSU Datapipe 3.1.
4. Re-enable trendcopy on the central server.

After the installation is complete, you must set up connections with satellite server databases, configure trendcopy pull commands, and switch off aggregations above the hourly level on the satellite servers. For details, see Chapter 5, Setting Up a Distributed System.

Installing CiscoWorks

A functioning CallManager environment consists of CallManager systems and MGCP gateways.

CiscoWorks is available on *Cisco CD One, Fifth Edition for Windows*. Please refer to documentation published by Cisco for more information about installing, configuring, and troubleshooting CiscoWorks.

Follow these steps to install CiscoWorks:

1. Download Cisco GSU from the following URL:

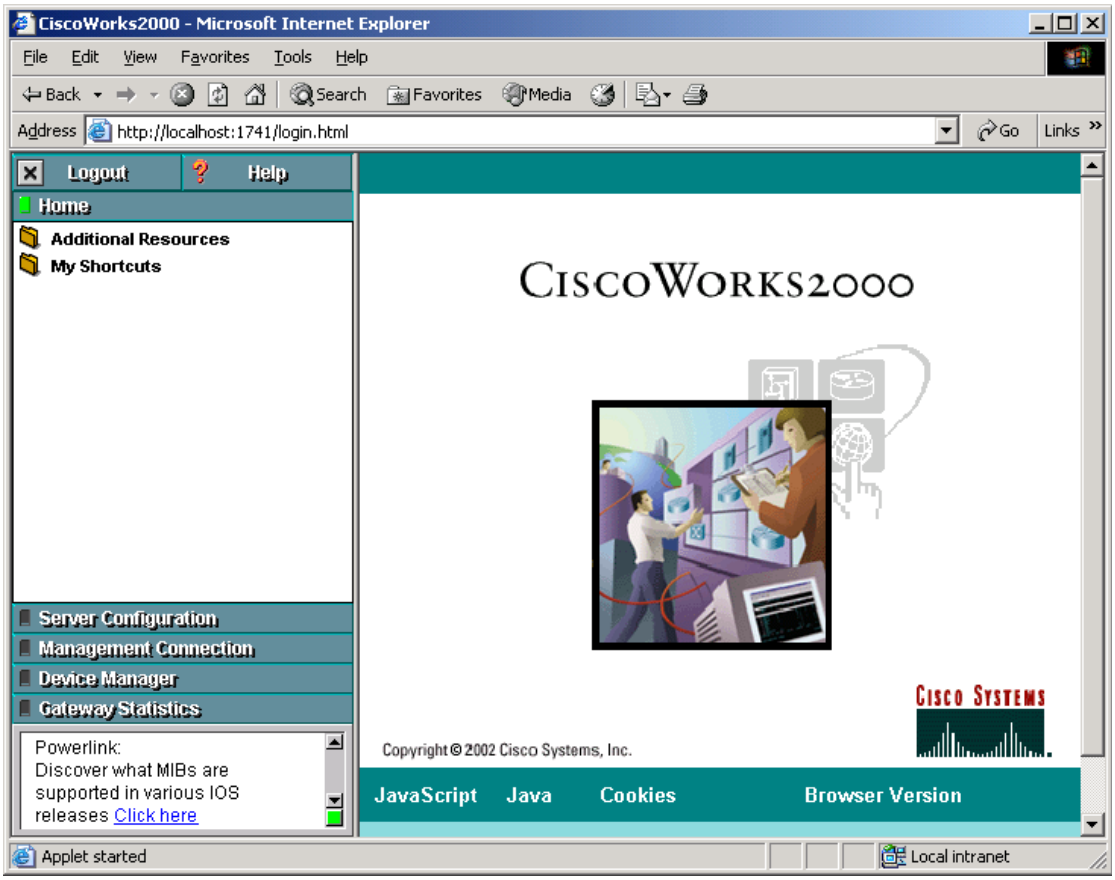
   http://www.cisco.com/cgi-bin/tablebuild.pl/cw-gtwystat-util

   You need a Cisco CCO login to download Cisco GSU. If you do not have a login, contact your local Cisco representative.

2 Download both the Cisco GSU readme and the executable installation file.

3 Read the readme.

4 Run the GSU installation file. The CiscoWorks menu window opens.



Configuring Cisco GSU

To configure Cisco GSU, perform the following tasks:

- Task 1: Create a data collection file.
- Task 2: Import the data collection file.
- Task 3: Schedule data collection.

Task 1: Creating a Data Collection File

Create a comma-separated data collection file. Your file will include a list of the gateways you want to monitor. Use the following syntax rules:

Field	Description
Device Name	**Required**. The device name or IP address for the CCM system.
Device Capabilities	**Required**. The only valid value is “CCM”.

Field	Description
Device Family	**Optional**. Describes the CCM platform.
Software Version	**Required**. The version number of the CCM software. Valid values are 3.1 and 3.2.
HTTP Server	**Optional**. The DNS name or IP address of the HTTP server in the CCM cluster. If this field is not specified, the address or the name of the CCM system is used.

Here is an example of an entry in your data collection file:

```
CCMSys1,CCM,MCS,3.1,
```

For more information, refer to online help.

Task 2: Importing the Data Collection File

Follow these steps to import the data collection file:

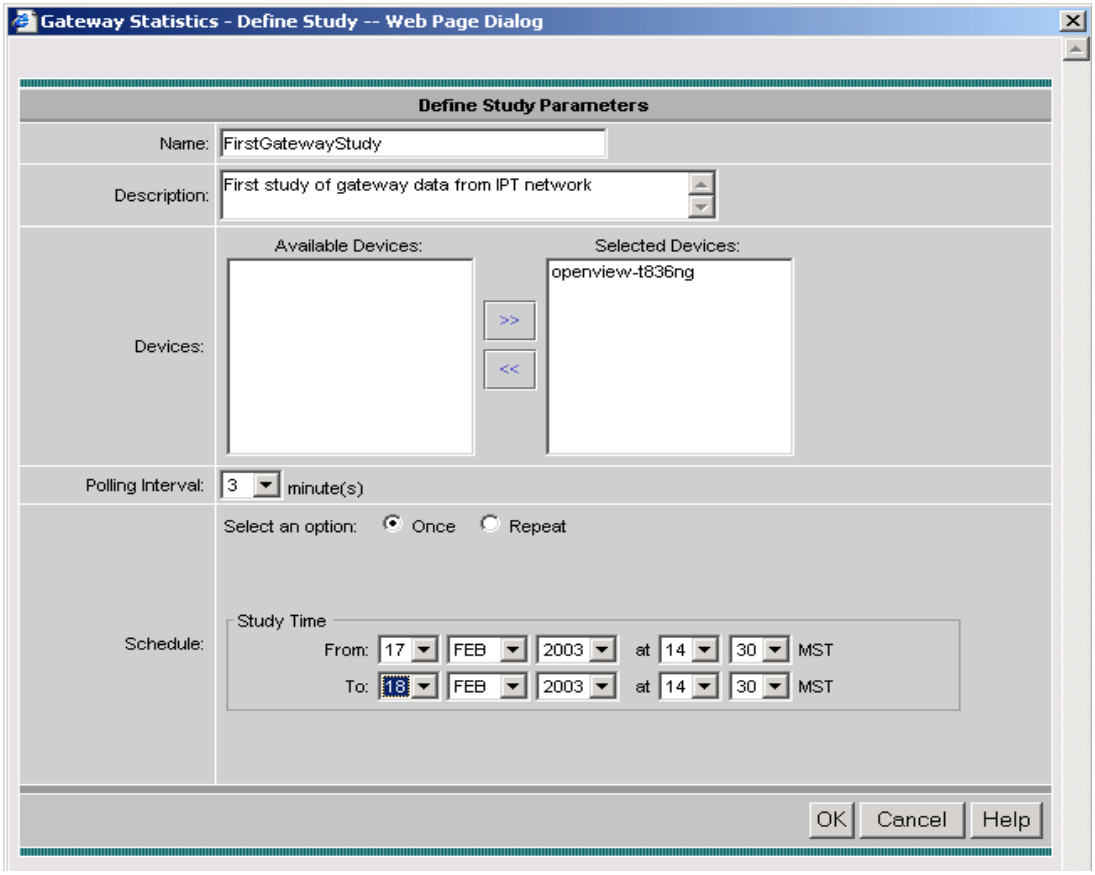
1. From the CiscoWorks menu, select **Gateway Statistics**.
2. From the Gateway Statistics menu, select **Device Management**.
3. From the Device Management menu, select **Device Import**. When you are prompted, enter the path and name of the data collection file you created.
4. Close the Device Import window.

Task 3: Scheduling Data Collection

Follow these steps to schedule data collection by defining study parameters:

1. From the CiscoWorks menu, select **Gateway Statistics**.

2 From the Gateway Statistics menu, select **Study Management**. The Define Study Parameters window opens.



3 Schedule data collection by accepting or modifying the defaults for polling interval and schedule.

4 Click **OK**.

Installing Cisco IP Telephony Statistics 3.1

This section covers the following tasks:

- Task 1: Stop OVPI Timer and extract packages from the report pack CD
- Task 2: Upgrade to Common Property Tables 3.5
- Task 3: Remove Thresholds Module 4.0
- Task 4: Install these packages:
  - Cisco IP Telephony Statistics 3.1
  - Cisco IPT Statistics Location 3.0
  - Cisco IP Telephony Statistics Thresholds (optional)
  - Cisco GSU Datapipe
- Task 5: Restart OVPI Timer

Task 1: Stop OVPI Timer and extract packages from the report pack CD

1. Log in to the system. On UNIX systems, log in as root.
2. Stop OVPI Timer and wait for processes to terminate.

   Windows: Select **Settings > Control Panel > Administrative Tools > Services**

   UNIX: As root, type one of the following:

   HP-UX: **`sh /sbin/ovpi_timer stop`**

   Sun: **`sh /etc/init.d/ovpi_timer stop`**
3. Insert the report pack CD in the CD-ROM drive. On Windows, a Main Menu displays automatically; on UNIX, mount the CD, navigate to the top-level directory for the CD drive, and type the setup command.
4. Select OVPI report packs by typing **1** in the choice field and pressing Enter. The install script displays a percentage complete bar. When extraction finishes, the install script starts Package Manager. The Package Manager welcome window opens.

Once the extract is done, you have the option of navigating to the to the Packages directory on your system to see the results. These are the folders beneath the IP_Telephony folder:

- Docs
- Gateway_Statistics.ap
- Gateway_Statistics_Demo.ap
- Gateway_Statistics_Location.ap
- Gateway_Statistics_Thresholds.ap
- IPT_Admin.ap
- IPT_CallDetails.ap
- IPT_CallDetails_Demo.ap
- IPT_CallDetails_Location.ap
- IPT_CallDetails_Thresholds.ap
- NNM_Utils

Under Cisco GSU Datapipe, you will see the following folder:

- CiscoGSU_Datapipe.ap

Task 2: Upgrade to Common Property Tables 3.5

If you are running an earlier version of Common Property Tables, upgrade to Common Property Tables 3.5. Observe these rules:

- Do not install other package at the same time; install the Common Property Tables upgrade package and *only* the Common Property Tables upgrade package.
- Accept the Deploy Reports option. If you disable the default, the forms that come with Common Property Tables will not be deployed to the OVPI Application Server.
- When Package Manager indicates that the upgrade is complete, click **Done** to return to the Management Console.

If you need help with the upgrade, refer to the *Common Property Tables 3.5 User Guide*.

Task 3: Remove any previous version of the Thresholds Module

There is no upgrade path for the Thresholds Module. The latest version is version 5.0. If you are running an earlier version of the Thresholds Module (most likely version 3.0 or possibly version 4.0) uninstall this package by starting Package Manager and following the on-screen directions for package removal. When the uninstall is complete, click **Done** to return to the Management Console.

Package Manager will install the newest version of the Thresholds Module for you, automatically, if and when you select for installation the thresholds sub-package that comes with Cisco IP Telephony Statistics. In Task 4, below, you are directed to install the thresholds sub-package. Install the thresholds sub-package and Package Manager will select and install Thresholds Module 5.0 for you.

Task 4: Install Cisco IP Telephony 3.1 and the Cisco GSU Datapipe

1. Start Package Manager. The Package Manager welcome window opens.
2. Click **Next.** The Package Location window opens.
3. Click **Install.** Approve the default installation directory or use the browse feature to select a different directory if necessary.
4. Click **Next.** The Report Deployment window opens. Accept the default for Deploy Reports; accept the default for application server name and port. Type your username and password for the OVPI Application Server.
5. Click **Next.** The Package Selection window opens.
6. Click the check box next to the following package:
   - *Cisco IP Telephony Statistics 3.1*
   - *Cisco IPT Statistics Location 3.0*
   - *Cisco IP Telephony Statistics Thresholds*
   - *Cisco IP Telephony Statistics Demo* [optional]
   - *Cisco GSU Datapipe 3.1*
7. Click **Next.** The Type Discovery window opens. To run Type Discovery immediately after package installation, accept the default.
8. Click **Next.** The Selection Summary window opens.
9. Click **Install.** The Installation Progress window opens and the install process begins. When the install finishes, a package install complete message appears.
10. Click **Done** to return to the Management Console.
11. Restart OVPI Timer.

    Windows: Select **Settings > Control Panel > Administrative Tools > Services**

    UNIX: As root, type one of the following:

    HP-UX: **`sh /sbin/ovpi_timer start`**

    Sun: **`sh /etc/init.d/ovpi_timer start`**
12. Click **Next**. The Type Discovery window opens.
13. Type Discovery is not required for Cisco IP Telephony Statistics and CiscoGSU_Datapipe. If no other packages are to be installed at the same time, clear the Discover check box and click **Next**. The Selection Summary window opens.

14 Click **Install**. The Installation Progress window opens; when installation is complete, the following message appears: `Report Package: Completed`.

15 Click **Done**.

16 Restart OVPI Timer.

Windows: Do the following:

a From the Control Panel, select **Administrative Tools > Services**

b Select OVPI Timer from the list of services.

c From the Action menu, select **Start**.

UNIX: As root, do one of the following:

— HP-UX: **`sh /sbin/ovpi_timer start`**

— Sun: **`sh /etc/init.d/ovpi_timer start`**

Accessing Deployed Reports

When you installed the this package, you enabled the Deploy Reports option. As a result, the reports (as well as any change forms that come with the reports) were deployed to the OVPI Application Server. Once reports reside on the OVPI Application Server, you can view reports using a web browser or one of the OVPI client applications.

If the client applications are installed on your system, you have access to Report Viewer, Report Builder, and the Management Console. If you don't have the client applications, using a web browser to view reports is the only way you can view reports.

For more information about the clients, refer to the *OVPI 5.1 Installation Guide*. For details about the Management Console, including how to use the Object/Property Management view to launch reports specific to a selected object, refer to the *OVPI 5.1 Administration Guide*.

New Objects for the Object Model

An object is any item that has performance data or property information associated with it. Devices, customers, and locations are objects categories that belong to OVPI's default object model. When you select an object in the object model, you refresh the right side of the Object/Property Management window. Under **General Tasks**, you will see a list of forms, under **Object Specific Tasks**, you will see a list of forms, and under **Object Specific Reports**, you will see a list of reports.

The object tree changes each time you install a new report pack. Installing the Cisco IP Telephony Statistics package adds the following object categories to the object model:

- Cluster
- CallManager
- Gateway
- DS1
- Port/Channel

Package Removal

Follow these steps to uninstall Cisco IP Telephony Statistics:

1. Log on to the system. On UNIX systems, log on as root.
2. Stop OVPI Timer and wait for processes to stop running.

   Windows: Do the following:

   a. From the Control Panel, select **Administrative Tools** → **Services**

   b. Select OVPI Timer from the list of services.

   c. From the Action menu, select **Stop**.

   UNIX: As root, do one of the following:

   — HP-UX: **`sh /sbin/ovpi_timer stop`**

   — Sun: **`sh /etc/init.d/ovpi_timer stop`**
3. Start Package Manager. The Package Manager welcome window opens.
4. Click **Next**. The Package Location window opens.
5. Click **Uninstall**.
6. Click **Next**. The Report Undeployment window opens. Accept the default for Undeploy Reports; also accept the defaults for application server name and port. Type your username and password for the OVPI Application Server.
7. Click **Next**. The Package Selection window opens.
8. Click the check box next to the following packages:

   - *Cisco IP Telephony Statistics*
   - *Cisco IPT Statistics Location*
   - *CiscoGSU_Datapipe*
   - *Cisco IP Telephony Statistics Thresholds* (if installed)
   - *Cisco IP Telephony Statistics Demo* (if installed)
9. Click **Next**. The Selection Summary window opens.
10. Click **Uninstall**. The Progress window opens. When the uninstall process is complete, a removal complete message appears.
11. Click **Done**.
12. Restart OVPI Timer.

    Windows: Do the following:

    a. From the Control Panel, select **Administrative Tools** → **Services**

    b. Select OVPI Timer from the list of services.

    c. From the Action menu, select **Start**.

    UNIX: As root, do one of the following:

    — HP-UX: **`sh /sbin/ovpi_timer start`**

— Sun: **`sh /etc/init.d/ovpi_timer start`**

Removing Cisco IP Telephony Statistics automatically removes the Cisco GSU Datapipe even if you did not select the datapipe for removal.

4 Package Configuration

This chapter covers the following topics:

- Specifying the Source Data Directory
- CallManager Clusters
- Resource Thresholds and Change Forms

Specifying the Source Data Directory

Before the Cisco GSU Datapipe can begin to collect data, it needs to know where the source data files are located. According to the default, the raw data files from Cisco Gateway Statistics Utility should be located on the server that is running the Cisco GSU Datapipe. If the raw data files are located on a remote server, the Cisco GSU Datapipe can be configured to use FTP to retrieve those files.

The default directory for the location of the raw data files is:

```
${DPIPE_HOME}/data/ImportData/CiscoGSU_Datapipe
```

The Cisco GSU Datapipe includes a preprocessor. The purpose of the preprocessor is to filter the raw data and put the raw data into a format that can be manipulated by the Cisco GSU Datapipe. The preprocessor (a perl script, `CiscoGSU_PP.pl`) produces the following output:

- `CManager.dat`
- `Gateway.dat`
- `Channel.dat`

The preprocessor stores these files in the source data directory. The Cisco GSU Datapipe reads the output from the preprocessor and imports the data into the OVPI database using the `CiscoGSU_Collection.pro` file and the following specialized configuration TEEL files:

- `CiscoGSU_Cmanager.teel`
- `CiscoGSU_gateway.teel`
- `CiscoGSU_channel.teel`

Before package installation, the TEEL files are located in:

```
{DPIPE_HOME}/packages/CiscoGSU_Datapipe/CiscoGSU_Datapipe.ap
```

After installation, the TEEL files are located in:

```
{DPIPE_HOME}/packages/CiscoGSU_Datapipe/CiscoGSU_Datapipe.ap
```

{DPIPE_HOME}/lib

If you make changes to TEEL files after installation, make the same changes in both directories.

Changing the Source Directory Path

If raw GSU data files are located on a remote system, you must modify a line in a file. Follow these steps:

1. Open the {DPIPE_HOME}/scripts/CiscoGSU_Collection.pro file
2. Locate this line:

   {DPIPE_HOME}/bin/perl {DPIPE_HOME}/bin/CiscoGSU_PP.pl

3. Add this to the end of the line:

-f 1 -m <*Remote_Host_Name*> -u <*Username*> -p <*Password*> -r <*Remote_directory*>

If the data source directory is not the same as the default directory described in the preceding section, make the following changes:

1. Navigate to the appropriate directory (see the discussion above regarding which directories are involved).
2. Open the CiscoGSU_Collection.pro file.
3. Locate the following line:

   {DPIPE_HOME}/bin/perl {DPIPE_HOME}/bin/CiscoGSU_PP.pl

4. Add this to the end of the line:

   -l <*new directory path*>

5. Open the following files:

   — CiscoGSU_Cmanager.teel

   — CiscoGSU_gateway.teel

   — CiscoGSU_channel.teel

6. Locate the line beginning with **Sourcefile =**
7. Change the path, replacing the existing path with the complete path name to the new directory; begin the new path name just after the equals sign (=). The source directory specified would normally be the directory created to receive the output from the Cisco Gateway Statistics Utility.

Leave the filename as specified in the original SourceFile.

Changing Source Disposition

TEEL files are also used to specify what to do with a data file once the data has been imported. The default behavior for the Cisco GSU Datapipe is to delete the preprocessed files. Because raw data files are archived, there is no need to archive data output by the preprocessor.

CallManager Clusters

Although the Cisco IP Telephony Statistics package operates without importing custom property information, none of the cluster nor location-oriented reports provide meaningful data (for example, all CallManagers would be combined into one group called “Location Unassigned”).

The Cisco IP Telephony Statistics Report Pack allows the user to place the devices (CallManagers and gateways) into logical groups:

- Groups of CallManagers (based on cluster or other criteria)
- Groups of gateways (based on geographic location or user-defined criteria)

The grouping of these objects is enabled by creating a cluster name and assigning CallManagers or gateways to the cluster. For example, if the CallManagers *s1ccm1* and *s1ccm2* are assigned to a cluster named *cluster1* and similarly if the CallManagers *s2ccm1* and *s2ccm2* are assigned a cluster named *cluster2*, the report pack aggregates the data belonging to these four CallManagers into two groups (*cluster1* and *cluster2*).

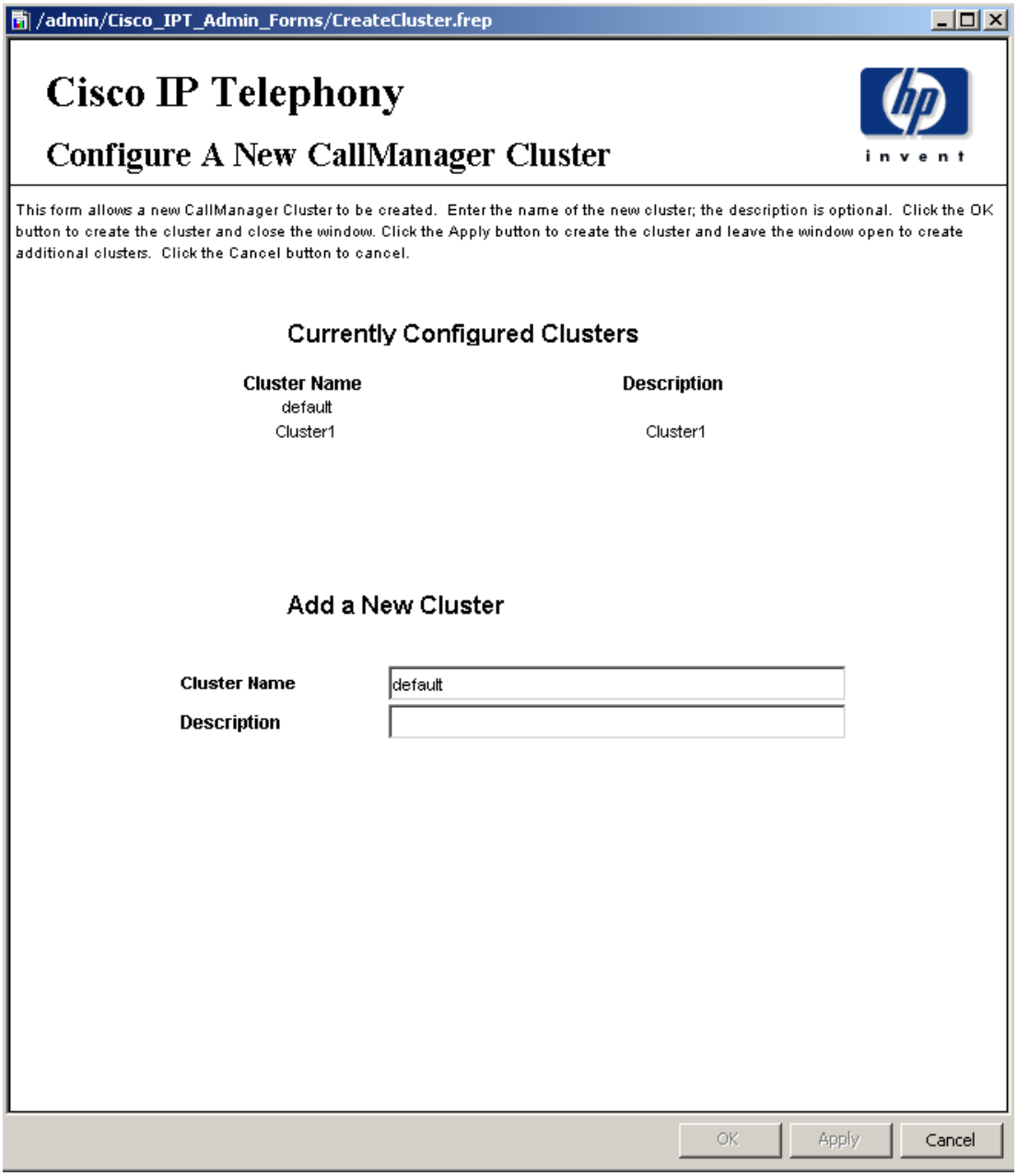
To get cluster information into reports, configure a CallManager cluster. You see clusters in reports immediately after OVPI processes your updated import file.

Configuring a CallManager Cluster

To configure a CallManager cluster, do the following:

1. Create a cluster name:
   a. Launch the Management Console.
   b. Click **Objects**. The Object/Property Management window opens.

c Select **File > New > Create a new CallManager Cluster**. The Configure A New CallManager Cluster form opens.



d Enter a name for the cluster and a brief description.

e Click **Apply** to save changes, **OK** to save changes and close the form, or **Cancel** to close the form without saving changes.

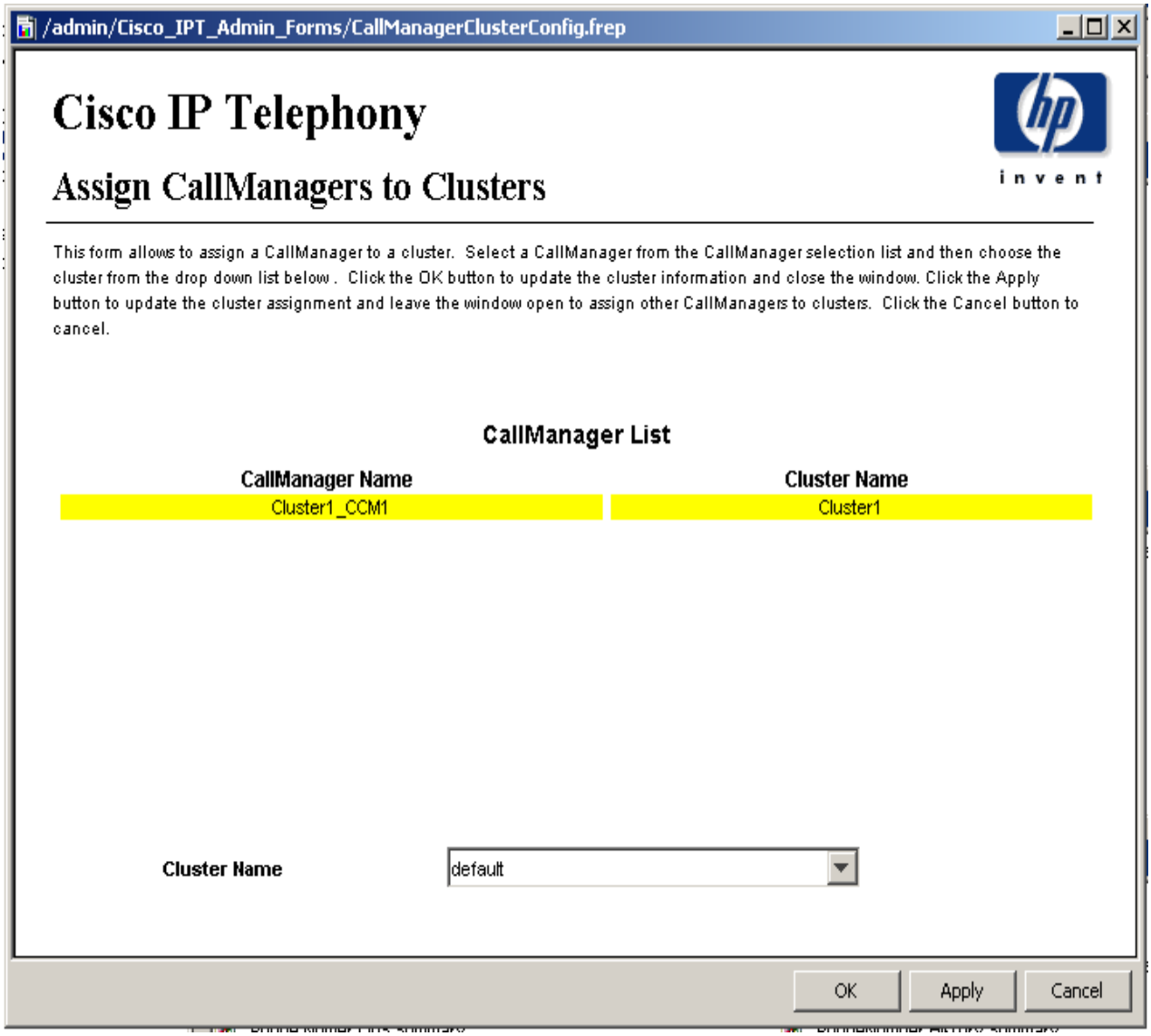
2 Assign CallManagers or gateways to the cluster:

a From the Object/Property Management window, select **View > Change View > Location**.

b Select a location.

c Highlight the Location Unassigned folder.

d Double-click **Assign CallManagers to Clusters** under **Object Specific Tasks**. The form opens.



e Highlight a CallManager name in the CallManager List and select the cluster name to which it is assigned.

f Click **Apply** to save changes, **OK** to save changes and close the form, or **Cancel** to close the form without saving changes.

Resource Thresholds and Change Forms

Cisco_IP_Telephony_Statistics_Thresholds, the optional thresholds sub-package that comes with IP Telephony Statistics, imposes thresholds for resource utilization monitoring. When performance reaches one of these default thresholds, OVPI sends a trap to the Network Node Manager (NNM). The following table describes the condition behind each threshold and the severity of the alarm.

Threshold	Default	Condition	Severity
PRIOverUtilization	95%	95% of PRI channels or more were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
PRIUnderUtilization	5%	5% of PRI channels or less were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
CASOverUtilization	95%	95% of CAS channels or more were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
CASUnderUtilization	5%	5% of CAS channels or less were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
FXOOverUtilization	95%	95% of FXO ports or more were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
FXOUnderUtilization	5%	5% of FXO ports or less were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
FXSOverUtilization	95%	95% of FXS ports or more were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
FXSUnderUtilization	5%	5% of FXS ports or less were occupied for each monitored device (CallManager or Gateway) during the previous day.	Warning
DeadChan	N/A	A channel was in OutofService status all the time during the previous day.	Warning

Modifying Gateway and CallManager Thresholds

Threshold values can be modified, using forms, for a gateway or CallManager. To modify a threshold value, do the following:

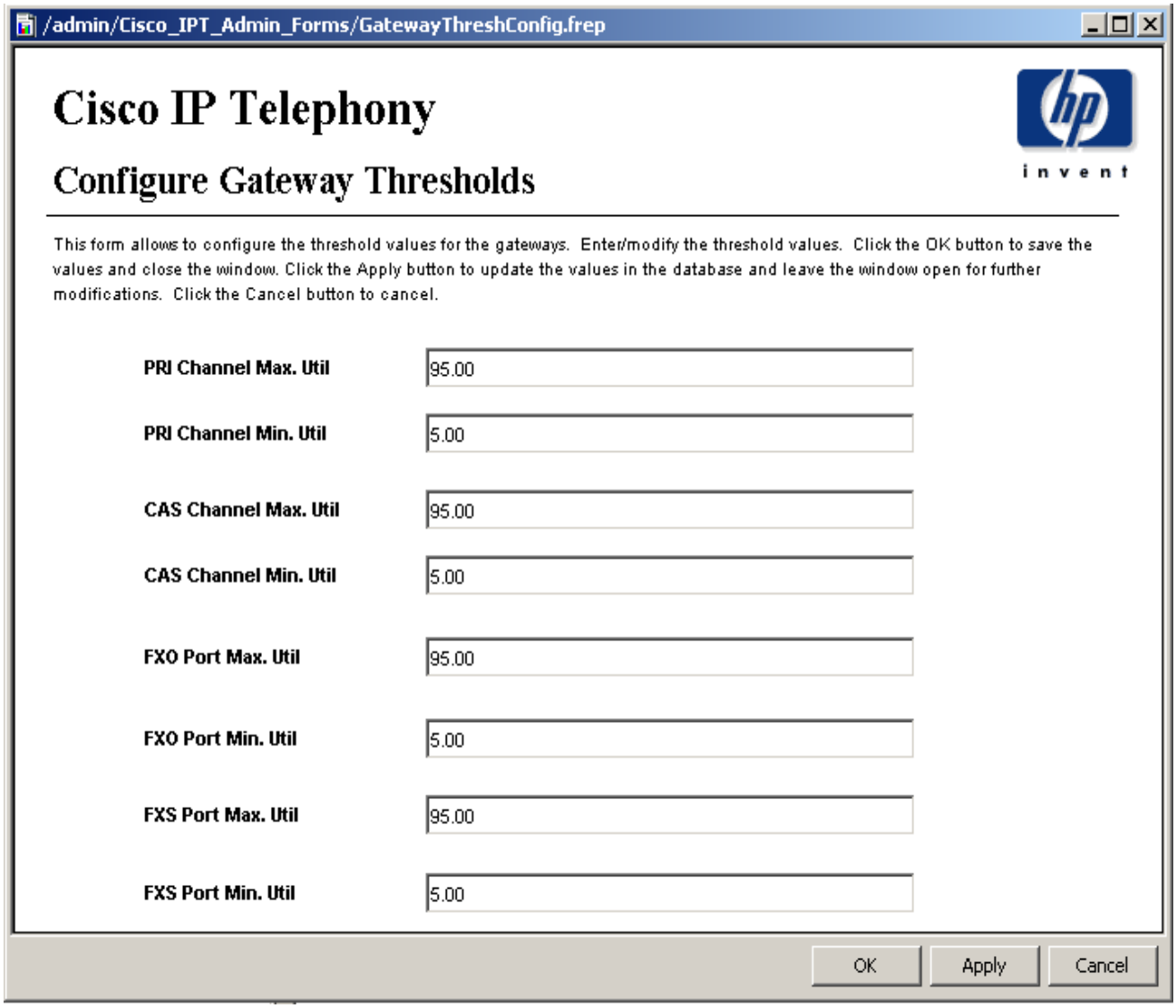
1 Launch the Management Console.

2 Click **Objects**. The Object/Property Management window opens.

3 Select **View** > **Change View** > **Cluster**.

4 Select a gateway or cluster.

5 Under **Object Specific Tasks**, double-click **Configure Gateway Thresholds** or **Configure CallManager Thresholds**. The form opens. Both forms are similar and the Configure Gateway Thresholds form is shown below.



6 Modify the threshold.

7 Click **Apply** to save changes, **OK** to save changes and close the form, or **Cancel** to close the form without saving changes.

Modifying Channel/Port Thresholds

The channel/port threshold value (DeadChan) can be modified:

1 Start Report Builder.

On a Windows system, select **Programs** > **HP OpenView** > **Performance Insight** > **Builder**.

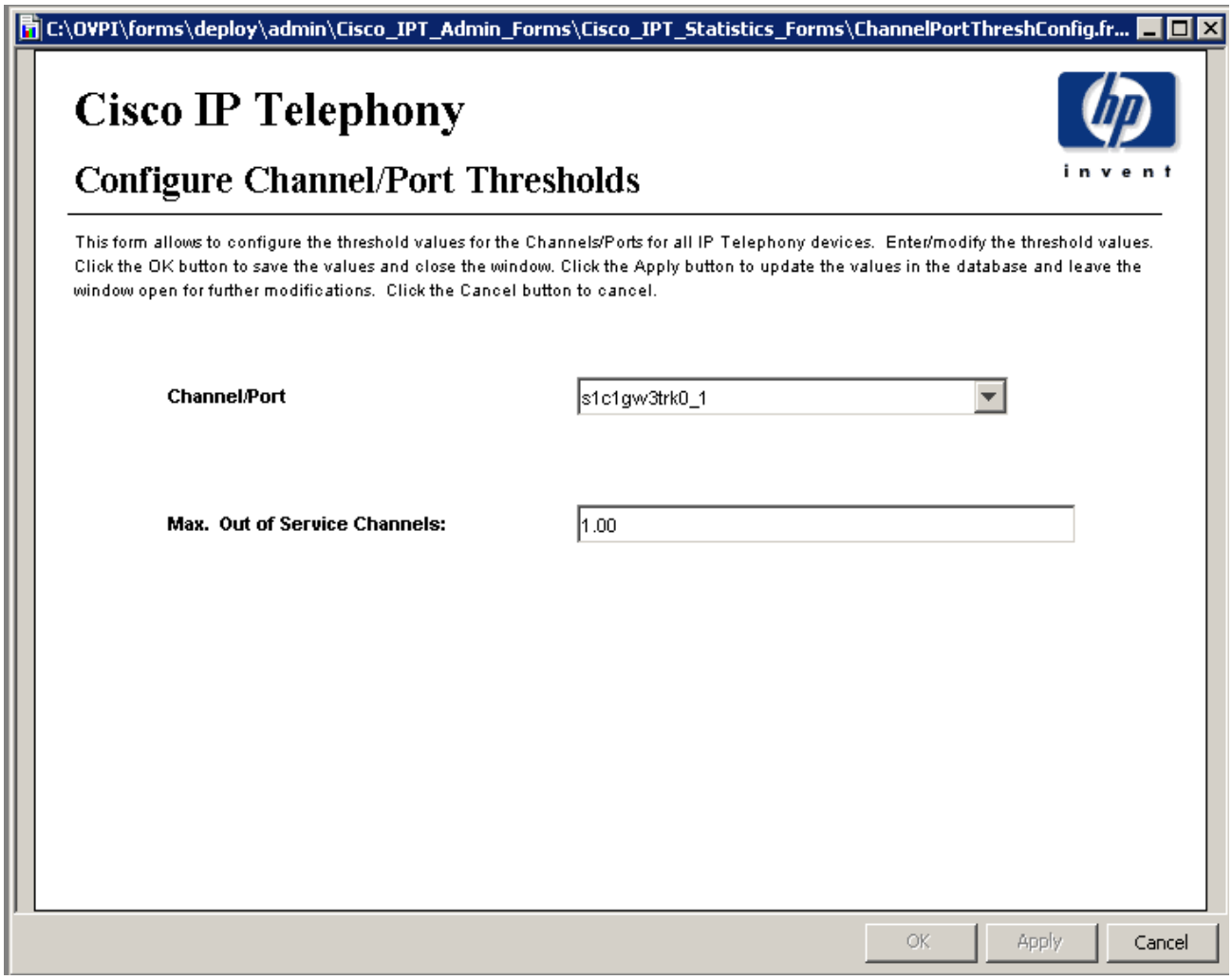
On a UNIX system, cd to *$OVPI_HOME*/bin and type **./builder**.

2 From Report Builder, select **File > Open**.

3 Open the following file:

%OVPI_HOME%\forms\deploy\admin\Cisco_IPT_Admin_Forms\Cisco_IPT_Statistics_Forms\ChannelPortThreshConfig.frep

The Configure Channel/Port Thresholds form opens.



4 Modify the threshold.

5 Click **Apply** to save changes, **OK** to save changes and close the form, or **Cancel** to close the form without saving changes.

5 Setting Up a Distributed System

If you intend to run Cisco IP Telephony Statistics as a distributed system across multiple servers, and you followed the installation guidelines in the installation chapter, your central server is running the report pack and each of your satellite servers is running the report pack and the Cisco GSU Datapipe. You are now ready to perform these tasks:

- Configure the central server
- Configure each satellite server
- Verify that all system clocks are synchronized

Configuring the Central Serve

Perform these tasks to configure the central server:

- Set up connections with satellite server databases
- Configure trendcopy pull commands

Task 1: Set up connections with satellite server databases.

1. Start the Management Console.
2. Click the **Systems** icon on the lower left. The **System/Network Administration** pane opens.
3. Right-click the **Databases** folder. When prompted, select **Add OVPI Database**. The Add Database Wizard opens.
4. Click **Next**.
5. Type the hostname and port number for the database you want to add; click **Next**.
6. Review the Summary. Repeat Steps 4 and 5 for each additional database.
7. Click **Finish** when you are done.

Task 2: Configure trendcopy pull commands from the central server to each satellite server.

1. Open the following file:

   `$DPIPE_HOME/scripts/Cisco_IP_Telephony_Statistics_Daily.pro`

2. Modify block0 as follows:
   a. Remove "#" before each line in block0, including the begin and end lines.
   b. Replace *SATELLITE_SERVER_1_DATABASE* with the satellite server name.
   c. Replace *THIS_MACHINE_DATABASE* with the central server name.
3. If there is more than one satellite server, create a copy of block0 for each satellite server and repeat step 2 for each block.

4 Save and close:

`$DPIPE_HOME/scripts/Cisco_IP_Telephony_Statistics_Daily.pro`

Configuring a Satellite Server

Switch off daily aggregations. Follow these steps:

> If the satellite server is performing local reporting, or if the Cisco_IP_Telephony_Statistics_Location module is installed, do not switch off daily aggregations.

1 Locate the `$DPIPE_HOME/lib/trendtimer.sched` file.

2 Comment out the lines referencing *Cisco_IP_Telephony_Statistics_Daily.pro*.

System Clocks

Make sure that the system clock on each satellite server is synchronized with the system clock on the central server.

6 Top Ten Reports

Cisco IP Telephony Statistics includes five Top Ten reports:

- 2 CallManager reports (active calls and port utilization)
- 2 cluster reports (call activity and port utilization)
- 1 location/gateway report

Each Top Ten report contains two tables, one for utilization and one for rate of increase. The utilization table on the left looks at data for yesterday. The rate of increase table on the right looks at baseline data, which includes data for yesterday. Top Ten reports refresh once daily.

The cluster reports aggregate statistics for multiple CallManagers. The CallManager reports provide statistics for individual CallManagers. The location report aggregates statistics for groups of devices at each location.

Top Ten reports display the *baseline average* and the *rate of increase*. The baseline average is calculated by averaging all the busy hours reported over the baseline period. The rate of increase is calculated by dividing the 30-day forecast value by the baseline average.

The following table describes the ranking performed by each report.

Report	**Ranking**
CallManager Active Calls	• Highest average active calls • Rate of increase in active calls
CallManager Port Utilization	• Highest port utilization rate • Highest rate of increase in port utilization
Cluster Call Activity	• Highest average active calls • Rate of increase in active calls
Cluster Port Utilization	• Highest port utilization rate • Highest rate of increase in port utilization
Location/Gateway	• Highest percentage of active ports by location • Rate of increase in port utilization by location • Highest percentage of port utilization by gateway • Highest rate of increase in port utilization by gateway

Cisco IP Telephony Statistics

Call Manager Active Calls Top Ten

The Call Manager Active Calls Top Ten Report provides lists of Call Managers which had the most active calls during the previous day. Call Managers are also listed by the projected increase rate.

Most Active Calls

Mon Apr 21 12:00 AM

	Call Manager	Average Active Calls
1	s2ccm2	28
2	s1ccm2	12
3	s1ccm1	12
4	s2ccm1	12

Active Calls Increase

Mon Apr 21 12:00 AM

	Call Manager	Baseline	+ 30 / 60 / 90 Days
1	s2ccm1	12	12 / 12 / 12
2	s1ccm1	12	12 / 12 / 12
3	s1ccm2	12	12 / 12 / 12
4	s2ccm2	27	27 / 27 / 26

Cisco IP Telephony Statistics

Call Manager Port Utilization Top Ten

The Call Manager Port Utilization Top Ten Report provides lists of Call Managers which had the highest port utlization percentage during the previous day. Call Managers are also listed by the projected increase rate.

Highest Port Utilization

Tue, Oct 26 12:00 AM

	Call Manager	Total Active Ports Rate (%)	Total Ports
1	s1ccm2	59.0	283
2	s1ccm1	55.5	283

Utilization Increase

Tue, Oct 26 12:00 AM

	Call Manager	Baseline (%)	+ 30/ 60/ 90 Days
1	s1ccm1	56.6	57.5 / 58. / 58.6
2	s1ccm2	57.0	56.6 / 56.4 / 56.2

Cisco IP Telephony Statistics

Cluster Call Activity Top Ten

The Cluster Call Activity Top Ten Report provides lists of CallManager clusters which had the most active calls during the previous day. CallManager clusters are also listed by the projected increase rate.

Most Active Calls

Wed, Oct 20 12:00 AM

	CallManager Cluster	Average Active Calls
1	default	241

Active Calls Increase

Wed, Oct 20 12:00 AM

	CallManager Cluster	Baseline	+ 30/60/90 Days
1	default	244	243 / 243 / 242

Cisco IP Telephony Statistics

Cluster Port Utilization Top Ten

The Cluster Port Utlization Top Ten Report provides lists of CallManager clusters which had the highest port utilization rate during the previous day. CallManager clusters are also listed by the projected increase rate.

Highest Port Utilization

Wed, Oct 20 12:00 AM

	CallManager Cluster	Total Active Ports Rate (%)	Total Ports
1	default	54.1	566

Utilization Increase

Wed, Oct 20 12:00 AM

	CallManager Cluster	Baseline (%)	+ 30/60/90 Days
1	default	55.1	54.8 / 54.6 / 54.5

Cisco IP Telephony Statistics

Location/Gateway Top Ten

The Location/Gateway Top Ten Report provides a list Locations or Gateways which had the highest port utilization rate during the previous day. Locations or Gateways are also listed by the projected increase rate of utilization.

Highest Port Utilization Locations

Wed, Oct 20 12:00 AM

	Location	Total Active Ports Rate (%)	Total Ports
1	Reston	56.2	130
2	Cupertino	56.1	153

Utilization Increase by Location

Wed, Oct 20 12:00 AM

	Location	Baseline (%)	+ 30/60/90 Days
1	Cupertino	56.1	56.1 / 56.1 / 56.1
2	Reston	56.5	56.4 / 56.4 / 56.3

Highest Port Utilization Gateways

Wed, Oct 20 12:00 AM

	Gateway	Location	Total Active Ports Rate (%)	Total Ports
1	s1c1c4k-3	Cupertino	58.5	56
2	s1c1cat4k-1	Cupertino	58.5	41
3	s1c2c4k-2	Reston	57.6	70
4	s1c23600-2	Reston	56.9	26
5	s1c1c4k-4	Cupertino	56.6	56
6	s1c2c4k-1	Reston	54.3	34

Utilization Increase by Gateway

Wed, Oct 20 12:00 AM

	Gateway	Location	Baseline (%)	+ 30/60/90 Days
1	s1c1c4k-3	Cupertino	58.2	58.3 / 58.3 / 58.4
2	s1c1c4k-4	Cupertino	57.8	57.5 / 57.3 / 57.
3	s1c1cat4k-1	Cupertino	57.7	57.9 / 58. / 58.2
4	s1c23600-2	Reston	56.8	56.8 / 56.8 / 56.9
5	s1c2c4k-1	Reston	56.2	55.7 / 55.3 / 55.
6	s1c2c4k-2	Reston	59.8	59.2 / 58.8 / 58.4

7 Summary Reports

Summary reports add depth to Top Ten Reports. They aggregate data for a particular element type and plot metrics on an hourly, daily, and monthly basis. Hourly graphs show anomalies and time-of-day usage patterns; daily and monthly graphs reveal trends derived from hourly data. Use summary reports to find out whether the performance you see in a Top Ten report reflects a temporary condition or an on-going trend.

CallManager Cluster Selection Table: Sorts clusters by busy hour call activity, from highest to lowest. This table reports events for yesterday. Selecting a cluster updates the PRI Channel Activity graph to reflect the activity for the selected cluster.

PRI Channel Activity Graph: If the average or busy hour levels for PRI channel activity in the hourly graph seem unusual, compare the hourly graph to the daily graph. The daily graph gives you a feel for what was normal for the last few weeks. If the hourly graph diverges significantly from the daily graph, yesterday's levels were not typical. The daily tab includes busy hour. If conditions are normal, busy hour and average utilization will not converge.

CallManager Cluster Selection Table: Sorts clusters by busy hour calls, from highest to lowest. Use this table to see which clusters require further investigation and which type or types of metrics need more attention. This table reports events for yesterday. Select a cluster to view call activity by CallManager in the CallManager Selection table.

CallManager Selection Table: Sorts CallManagers by call activity for the selected cluster, from highest to lowest. This table reports events for yesterday.

Gateway Selection Table and **DS1 Selection Table:** Displays data aggregated at various levels in the hierarchy. Similar to the CallManager Cluster and CallManager selection tables. The DS1 selection table is the lowest level in the hierarchy. Selecting a DS1 updates the Channel States graph with metrics for that DS1.

Channel States Graph: Displays the percentage of time spent in various states by the channels that belong to the selected DS1. Displays data at hourly, daily and monthly levels; if the hourly graph diverges significantly from the daily graph, yesterday was not typical.

See below for samples of the following reports:

- CallManager Call Activity Summary
- Cluster PRI Channel Activity Summary
- Gateway Summary by Location
- DS0 Usage Summary
- DS1 Usage Summary

Cisco IP Telephony Statistics

CallManager Call Activity Summary

The CallManager Call Activity Summary Report presents call activity metrics aggregated over all gateways for a given CallManager. This report can be used to view call distribution patterns across the CallManager installations.

CallManager Cluster Selection Table

Wed, Oct 20, 2004

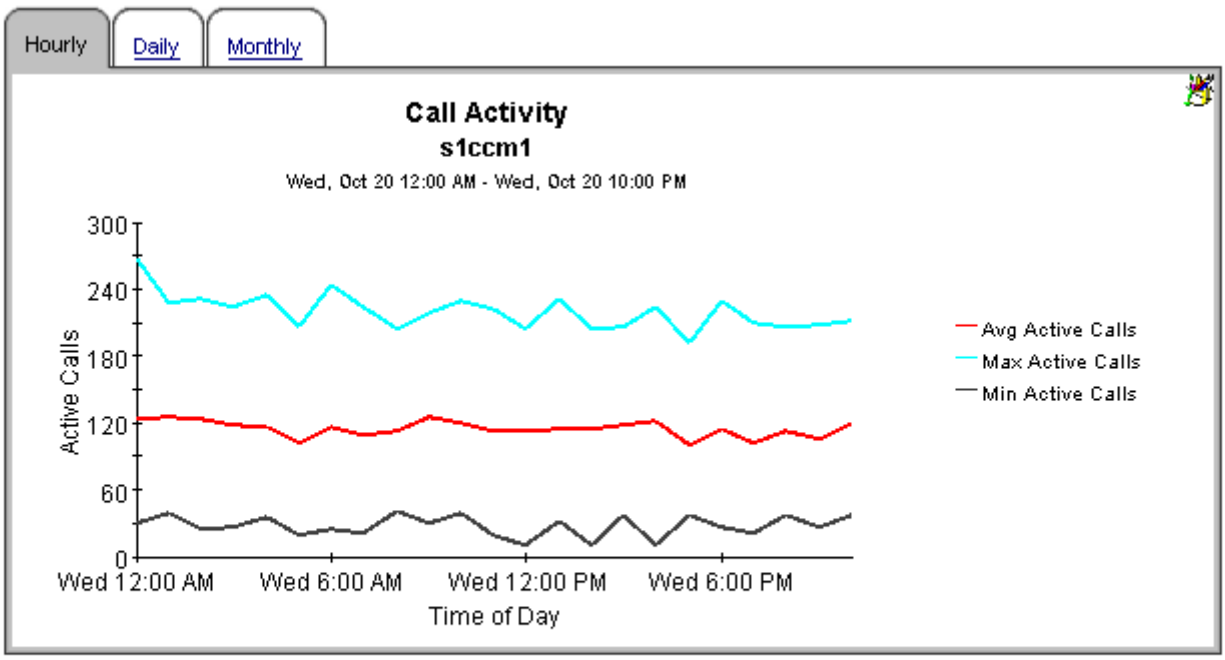
CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
default	241	330	177	144	79	8	4	84	46

CallManager Selection Table

default

Wed, Oct 20, 2004

CallManager Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
s1ccm1	126	165	96	72	43	4	2	42	24
s1ccm2	123	165	93	72	39	4	2	42	24


Hourly
Daily
Monthly
Call Activity
s1ccm1
Wed, Oct 20 12:00 AM - Wed, Oct 20 10:00 PM
300
240
180
120
60
0
Active Calls
Wed 12:00 AM
Wed 6:00 AM
Wed 12:00 PM
Wed 6:00 PM
Time of Day
Avg Active Calls
Max Active Calls
Min Active Calls

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Cisco IP Telephony Statistics

Cluster PRI Channel Activity Summary

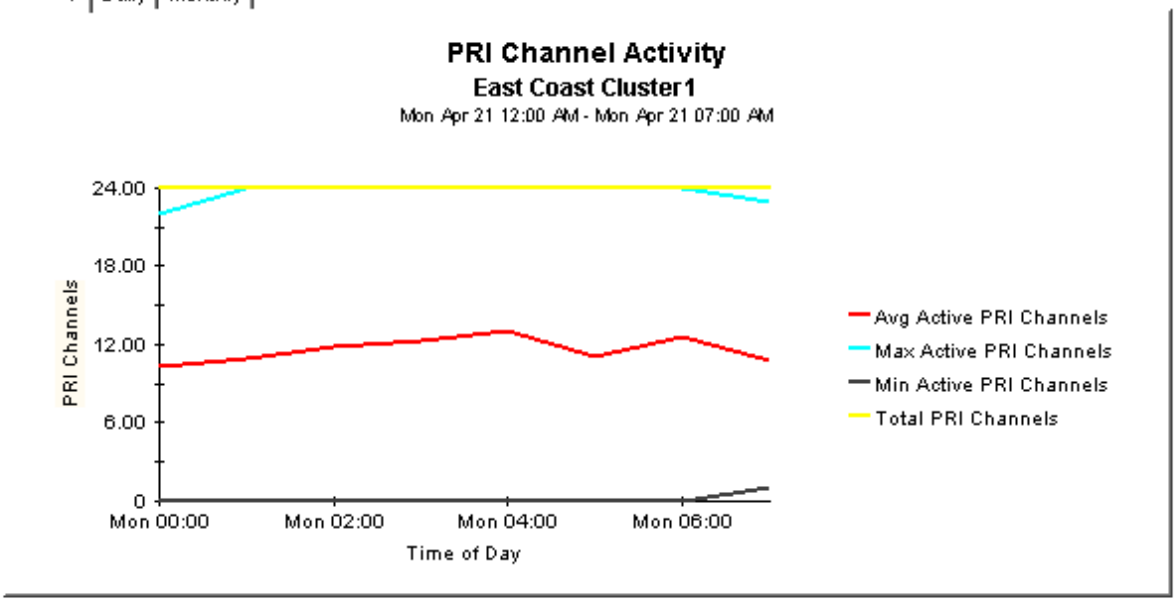
The Cluster PRI Channel Activity Summary Report presents PRI Channel Activity metrics aggregated for all CallManager(s) for a given cluster. This report can be used to view historical trunk utilization metrics and to identify call distribution patterns across the CallManager clusters.

CallManager Cluster Selection Table

Mon Apr 21 2003

CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
West Coast Cluster1	24	0	0	0	0	12	7	36	21
East Coast Cluster1	38	24	14	24	14	6	4	36	19

Hourly | Daily | Monthly



Cisco IP Telephony Statistics

Gateway Summary By Location

The Gateway Summary By Location Report presents gateway Statistics metrics aggregated over all ports/channels at a given location. This report can be used to drill down to individual gateways at a location in order to view historical port Statistics metrics for the selected gateway.

Location Selection Table

Wed, Oct 20, 2004

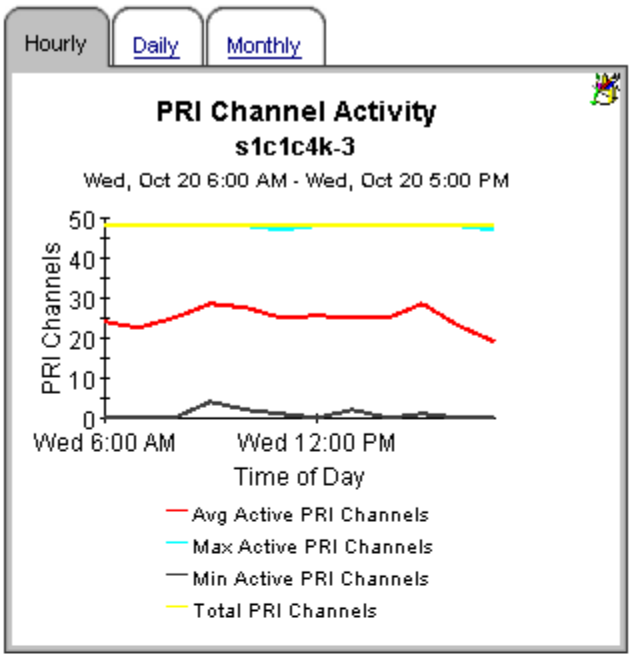
Location Name	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
All Locations	165	90	72	38	4	2	42	22
Cupertino	79	45	48	27	2	1	24	13
Reston	86	48	24	14	2	1	18	10

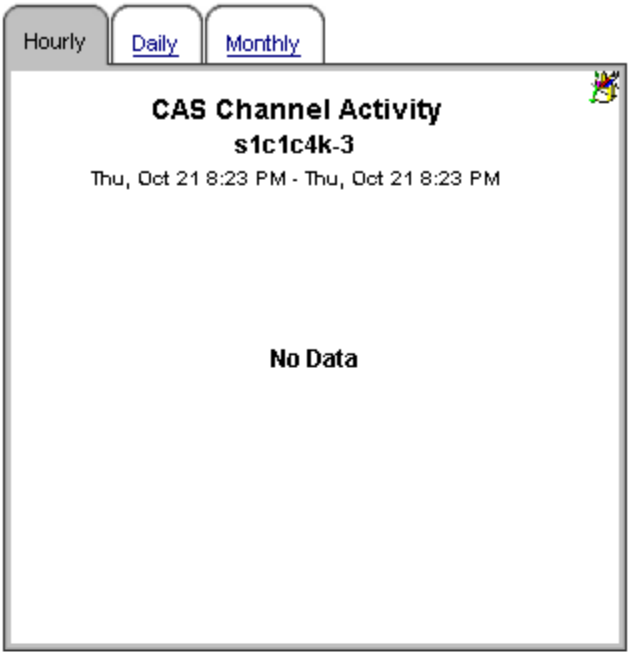
Gateway Selection Table

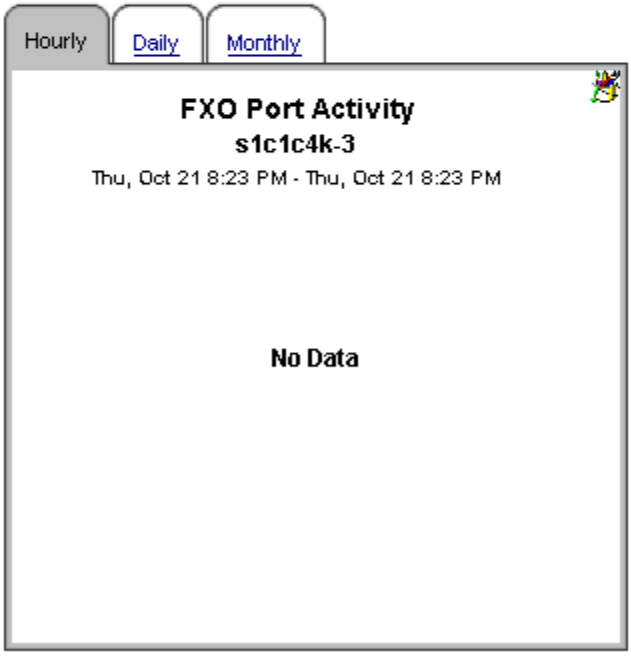
All Locations

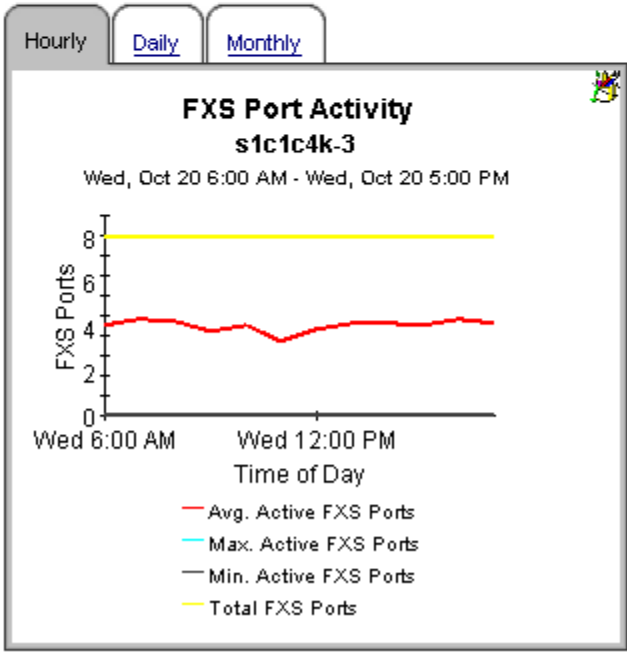
Wed, Oct 20, 2004

Gateway Name	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
s1c1c4k-3	48	28	0	0	0	0	8	4
s1c1c4k-4	0	0	48	27	0	0	8	5
s1c1cat4k-1	31	18	0	0	2	1	8	5
s1c23600-2	0	0	24	14	2	1	0	0
s1c2c4k-1	24	13	0	0	0	0	10	5


Hourly
Daily
Monthly
PRI Channel Activity
s1c1c4k-3
Wed, Oct 20 6:00 AM - Wed, Oct 20 5:00 PM
PRI Channels
50
40
30
20
10
0
Wed 6:00 AM
Wed 12:00 PM
Time of Day
Avg Active PRI Channels
Max Active PRI Channels
Min Active PRI Channels
Total PRI Channels


Hourly
Daily
Monthly
CAS Channel Activity
s1c1c4k-3
Thu, Oct 21 8:23 PM - Thu, Oct 21 8:23 PM
No Data


Hourly
Daily
Monthly
FXO Port Activity
s1c1c4k-3
Thu, Oct 21 8:23 PM - Thu, Oct 21 8:23 PM
No Data


Hourly
Daily
Monthly
FXS Port Activity
s1c1c4k-3
Wed, Oct 20 6:00 AM - Wed, Oct 20 5:00 PM
FXS Ports
8
6
4
2
0
Wed 6:00 AM
Wed 12:00 PM
Time of Day
Avg. Active FXS Ports
Max. Active FXS Ports
Min. Active FXS Ports
Total FXS Ports

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Cisco IP Telephony Statistics

DS0 Usage Summary

The DS0 Usage Summary Report presents the usage metrics for a given channel. This can be used to identify heavily utilized channels of a gateway and also to identify any dramatic changes in the usage patterns of a channel(for example a sudden increase in "out of service" state).

CallManager Cluster Selection Table

Wed, Oct 20, 2004

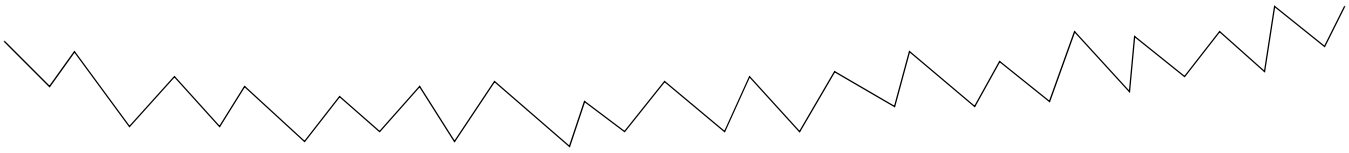
CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
default	241	330	177	144	79	8	4	84	46

CallManager Selection Table

default

Wed, Oct 20, 2004

CallManager Name	Avg Active Calls	Total PRI Channels	Avg. Active PRI Channels	Total CAS Channels	Avg. Active CAS Channels	Total FXO Ports	Avg. Active FXO Ports	Total FXS Ports	Avg Active FXS Ports
s1ccm1	115	165	83	72	36	4	2	42	21
s1ccm2	113	165	80	72	36	4	2	42	21



Gateway Selection Table

s1ccm1

Wed, Oct 20, 2004

Gateway Name	Total PRI Channels	Avg. Active PRI Channels	Avg. Active CAS Channels	Total CAS Channels	Total FXO Ports	Avg. Active FXO Ports	Total FXS Ports	Avg Active FXS Ports
s1c1c4k-3	48	25	0	0	0	0	8	4
s1c1c4k-4	0	0	23	48	0	0	8	4
s1c1cat4k-1	31	16	0	0	2	1	8	4

Channel Selection Table

s1c1c4k-3

Wed, Oct 20, 2004

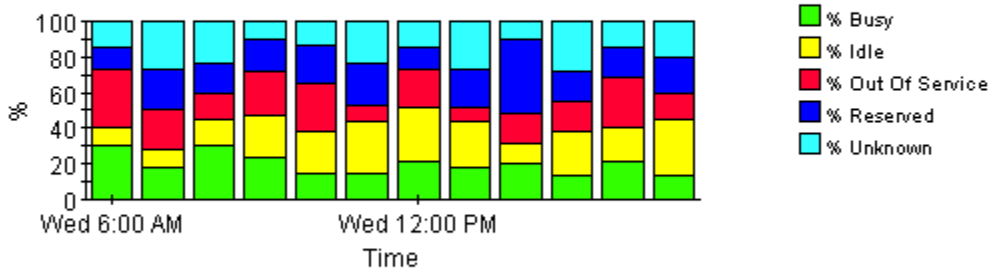
Channel	% Busy State	% Idle State	% Out Of Service State	% Reserved State	% Unknown State
s1c1gw3trk0_1	20	21	20	20	19
s1c1gw3trk0_10	18	21	22	18	20
s1c1gw3trk0_11	18	18	18	25	20
s1c1gw3trk0_12	19	20	24	17	20
s1c1gw3trk0_13	20	21	19	20	20
s1c1gw3trk0_14	20	22	17	19	22

Hourly | Daily | Monthly

Channel States

s1c1gw3trk0_1

Wed, Oct 20 6:00 AM - Wed, Oct 20 5:00 PM



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Cisco IP Telephony Statistics

DS1 Usage Summary

The DS1 Usage Summary Report presents the usage metrics for a given DS1. This can be used to view the channel utilization at the DS1 level and also to identify any dramatic changes in the usage patterns of a given DS1(for example a sudden increase in "out of service" state).

CallManager Cluster Selection Table

Mon Apr 21 2003

CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
West Coast Cluster1	24	0	0	0	0	12	7	36	21
East Coast Cluster1	38	24	14	24	14	6	4	36	19

CallManager Selection Table

West Coast Cluster1

Mon Apr 21 2003

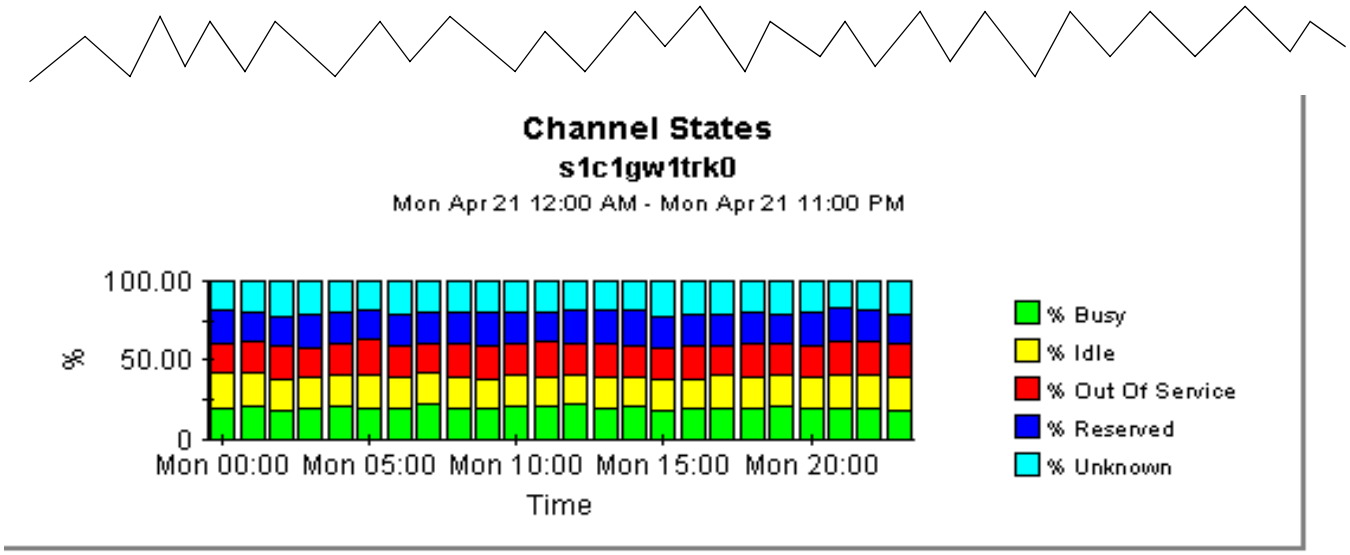
CallManager Name	Avg Active Calls	Total PRI Channels	Avg. Active PRI Channels	Total CAS Channels	Avg. Active CAS Channels	Total FXO Ports	Avg. Active FXO Ports	Total FXS Ports	Avg Active FXS Ports
s1ccm1	11	0	0	0	0	6	3	18	9
s1ccm2	11	0	0	0	0	6	3	18	9

Gateway Selection Table

s1ccm1

Mon Apr 21 2003

Gateway Name	Total PRI Channels	Avg. Active PRI Channels	Total CAS Channels	Avg. Active CAS Channels	Total FXO Ports	Avg. Active FXO Ports	Total FXS Ports	Avg Active FXS Ports
s1c1gw1	24	12	0	0	0	0	10	5
s1c1gw2	31	16	0	0	0	0	8	4


Channel States
s1c1gw1trk0
Mon Apr 21 12:00 AM - Mon Apr 21 11:00 PM
100.00
50.00
0
%
Mon 00:00
Mon 05:00
Mon 10:00
Mon 15:00
Mon 20:00
Time
% Busy
% Idle
% Out Of Service
% Reserved
% Unknown

8 Forecast Reports

Forecast reports alert you to conditions where port over-utilization or port under-utilization is developing. All forecast reports include a selection table followed by graphs. The selection table performs a ranking function, allowing you to see which elements are seeing the highest rates of increase based on data in the rolling baseline. The selection table sorts items from highest rate of increase to lowest rate of increase. In addition to baseline values, the selection table includes projections for:

- F30
- F60
- F90

The graphs below the selection table provide more detail about the item highlighted in the selection table. Each graph has three tabs:

Standard. Compares the baseline to F30, F60, and F90 values.

Day of Week. Aggregates data by day, allowing you to see whether overall growth is generally the same throughout the week or significantly different one day to the next. Because this view factors “downdays” out of the calculation, you can see what the forecasts are like when they are not skewed by abnormally low levels of utilization.

History. Displays the busy hour metrics that were used to calculate values for F30, F60, and F90.

See below for samples of the following reports:

- CallManager Forecast
- CallManager Cluster Forecast
- Gateway Forecast by CallManager
- Gateway Forecast by Location
- Location Forecast

Cisco IP Telephony Statistics

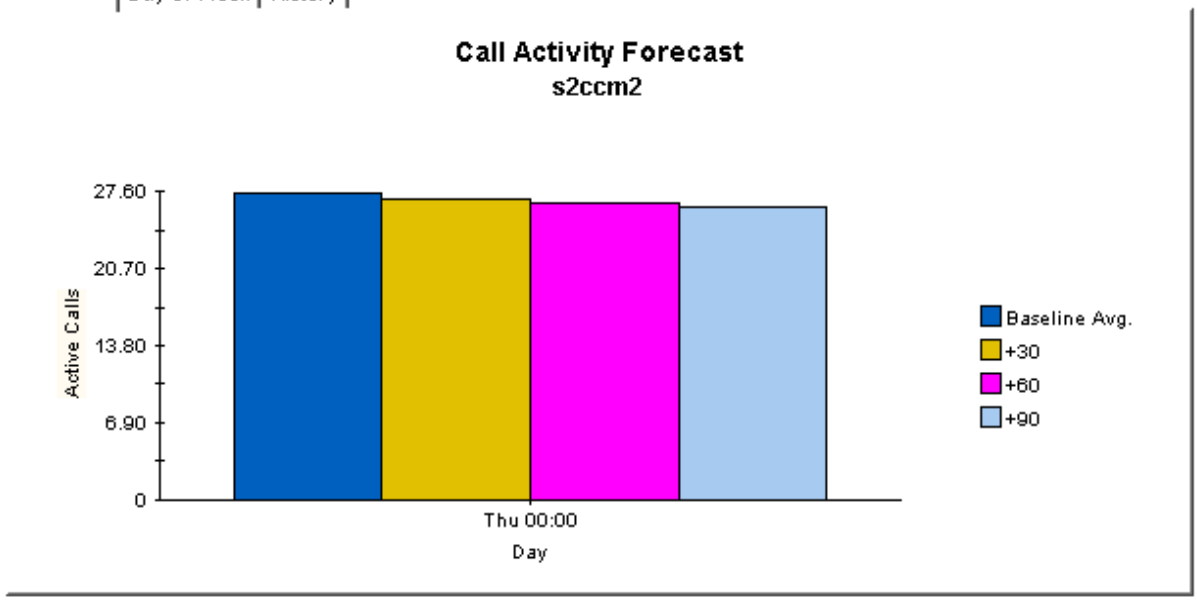
Call Manager Forecast

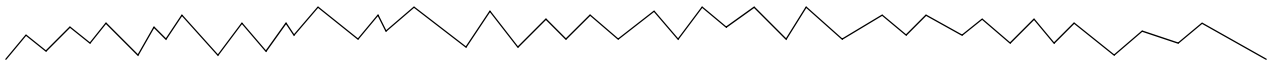
The Call Manager Forecast Report enables the user to quickly identify Call Managers with the greatest projected increase in call volume. The list of call managers are sorted by rate of increase in number of calls processed. Drill down charts present forecasted overall call voulme metrics for the selected Call Manager.

Call Manager Selection Table

Call Manager Name	Call Activity Baseline	Active Ports Baseline, %	F30 Active Ports Rate, %	F60 Active Ports Rate, %	F90 Active Ports Rate, %
s2ccm2	27	57.5	56.8	56.4	55.9
s2ccm1	12	57.8	58.3	58.6	59.0
s1ccm1	12	57.6	56.3	55.3	54.4
s1ccm2	12	57.7	55.9	54.6	53.3

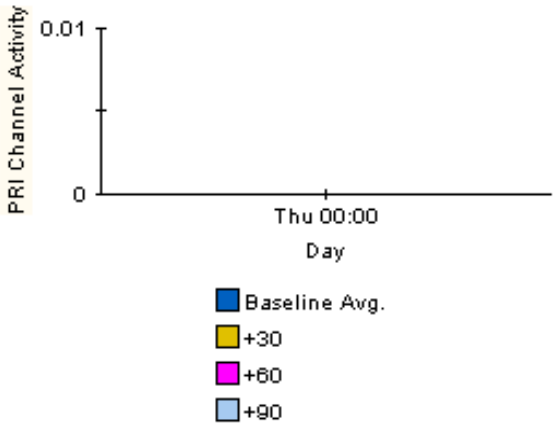
Standard | Day of Week | History





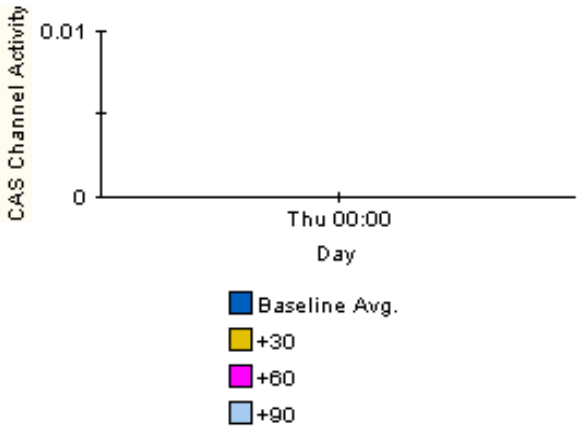
Standard | Day of Week | History

PRI Channel Activity Forecast
s1ccm1



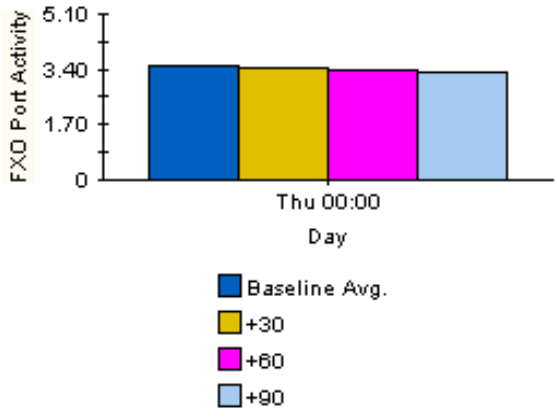
Standard | Day of Week | History

CAS Channel Activity Forecast
s1ccm1



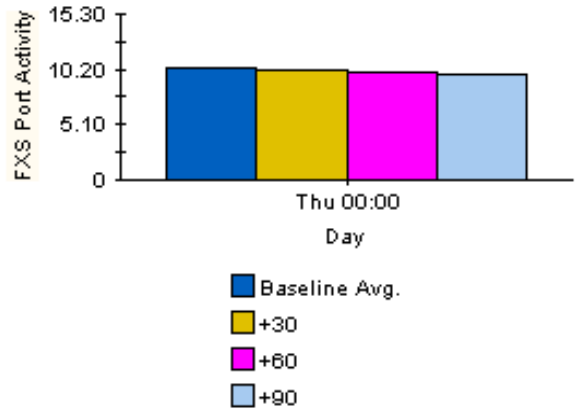
Standard | Day of Week | History

FXO Port Activity Forecast
s1ccm1



Standard | Day of Week | History

FXS Port Activity Forecast
s1ccm1



Cisco IP Telephony Statistics

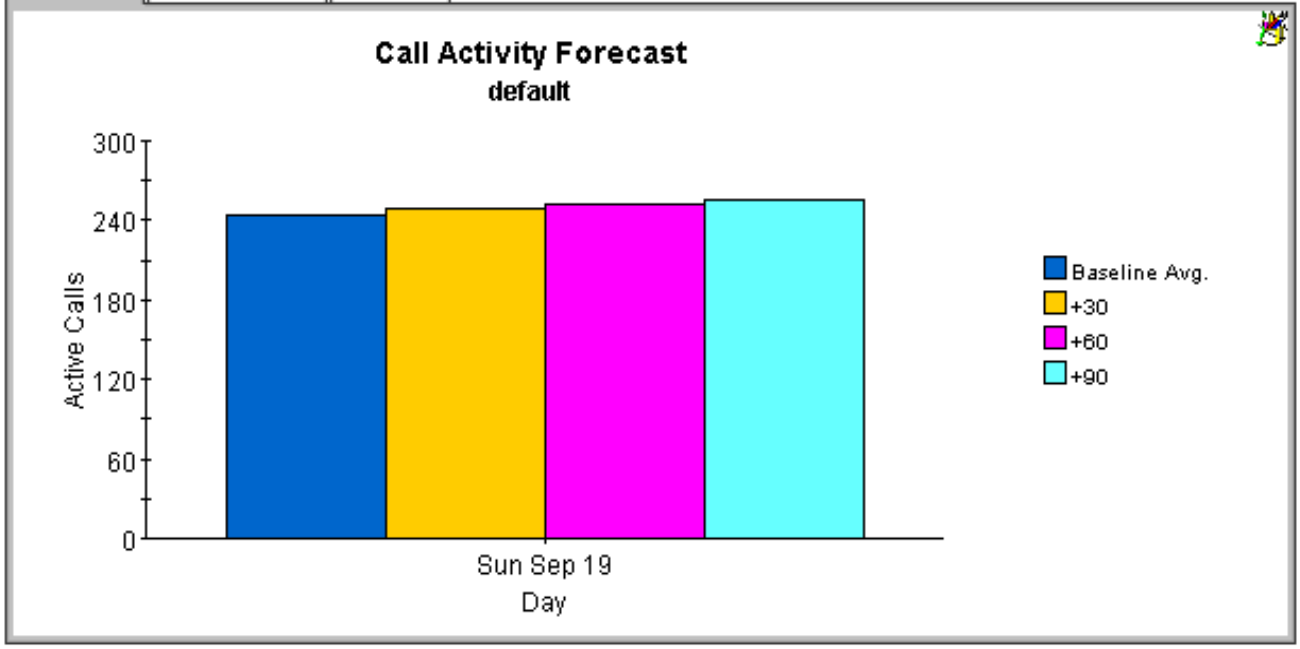
CallManager Cluster Forecast

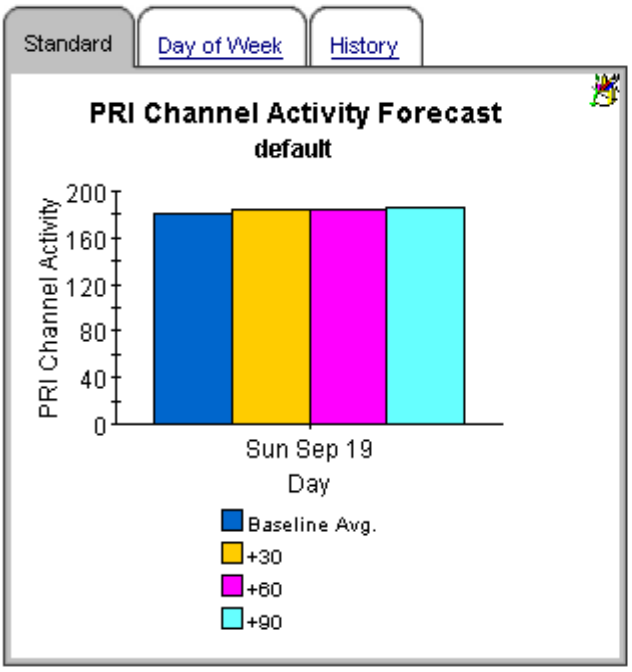
The CallManager Cluster Forecast Report enables the user to quickly identify CallManager Clusters with the greatest projected increase in call volume. The list of call managers are sorted by rate of increase in number of calls processed. Drill down charts present forecasted overall call voulme metrics for the selected Call Manager.

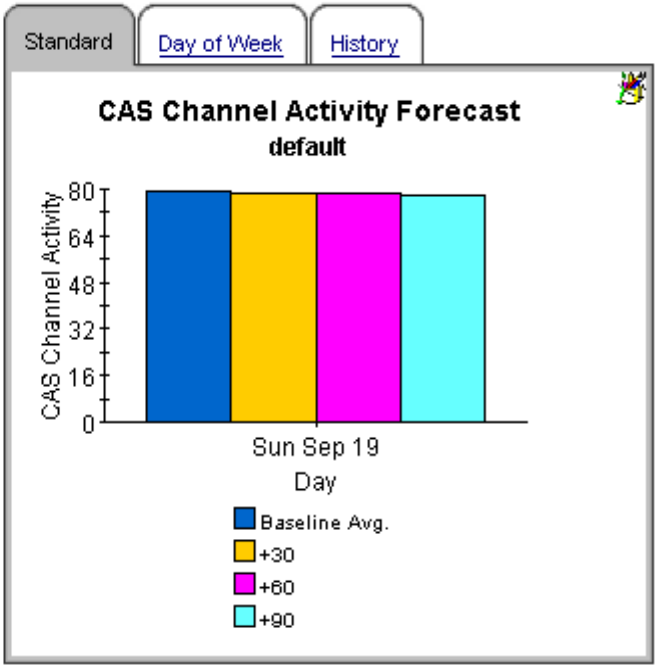
CallManager Cluster Selection Table

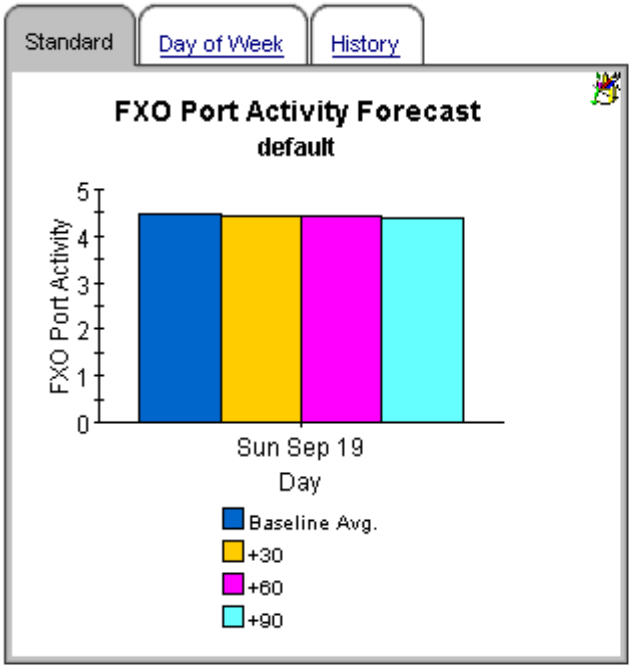
CallManager Cluster Name	Call Activity Baseline	Active Ports Baseline, %	F30 Active Ports Rate, %	F60 Active Ports Rate, %	F90 Active Ports Rate, %
default	246	55.1	55.4	55.5	55.6

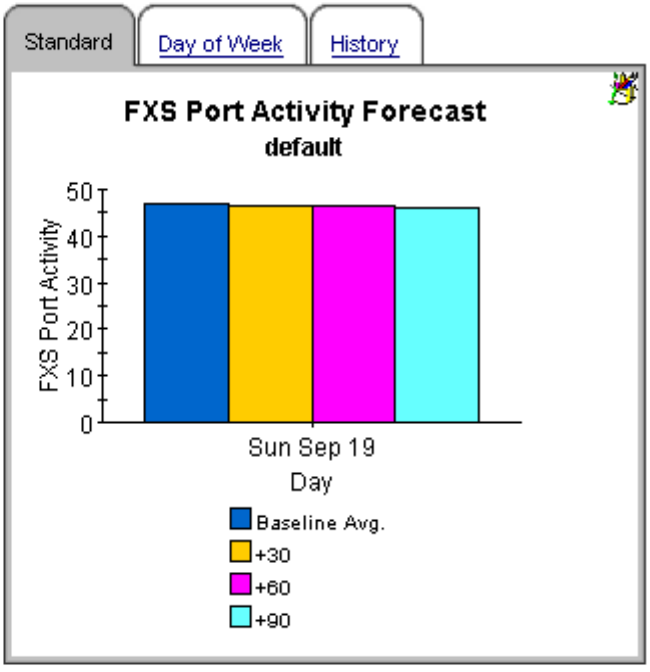
Standard | Day of Week | History




Standard
Day of Week
History
PRI Channel Activity Forecast
default
PRI Channel Activity
200
160
120
80
40
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
CAS Channel Activity Forecast
default
CAS Channel Activity
80
64
48
32
16
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXO Port Activity Forecast
default
FXO Port Activity
5
4
3
2
1
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXS Port Activity Forecast
default
FXS Port Activity
50
40
30
20
10
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90

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Cisco IP Telephony Statistics

Gateway Forecast by CallManager

The Gateway Forecast by Call Manager Report enables the user to quickly identify Gateways associated to a given Call Manager with the greatest projected increase in number of ports used. The list of gateways are sorted by rate of increase in number of ports used. Drill down charts present forecasted overall port occupnacy metrics for the selected gateway.

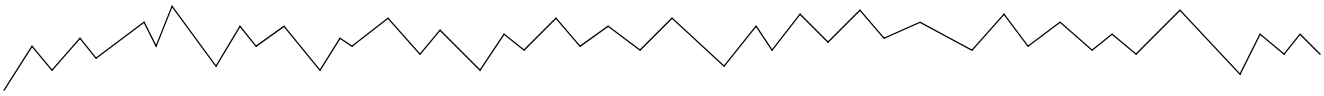
CallManager Selection Table

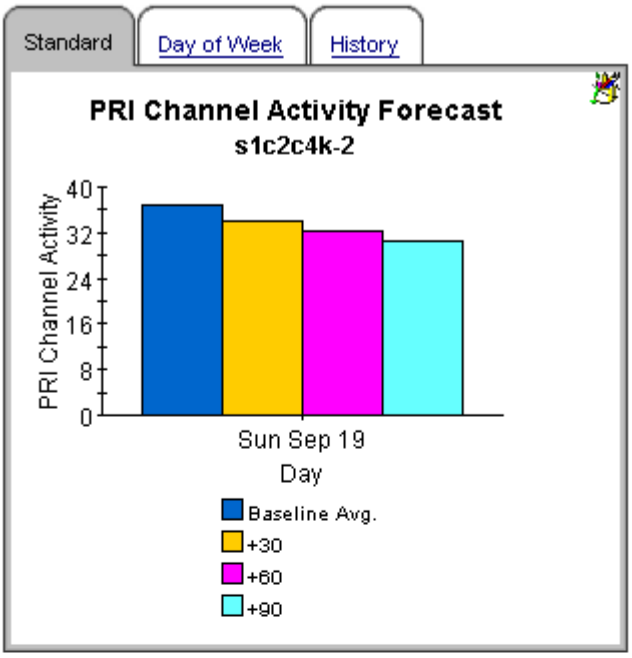
Call Manager Name	Call Activity Baseline	Active Ports Baseline, %	F30 Active Ports Rate, %	F60 Active Ports Rate, %	F90 Active Ports Rate, %
s1ccm2	127	57.0	56.6	56.4	56.2
s1ccm1	124	56.6	57.5	58.0	58.6

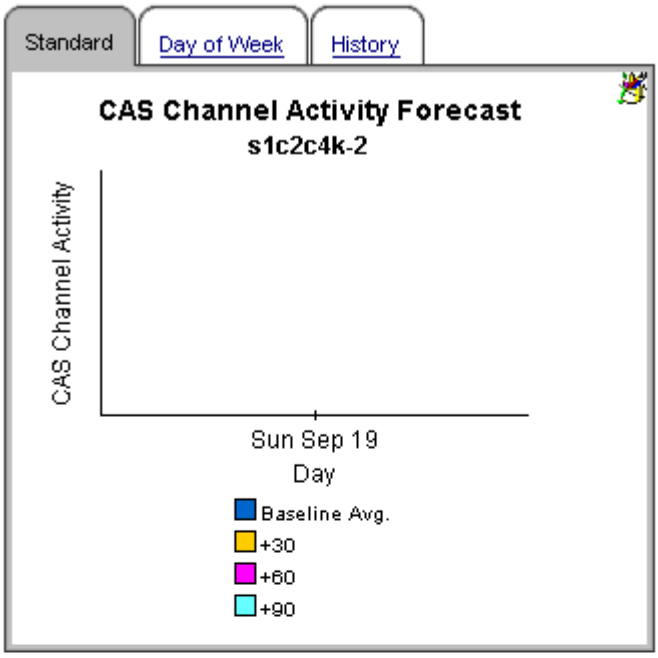
Gateway Selection Table

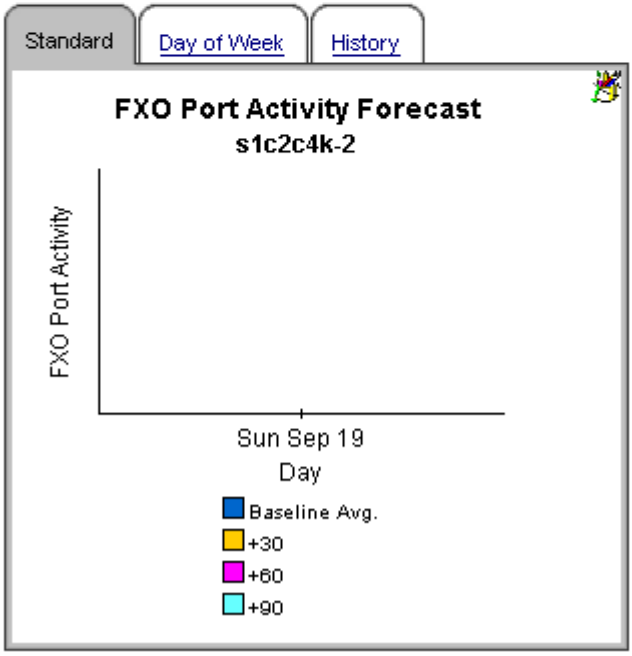
s1ccm2

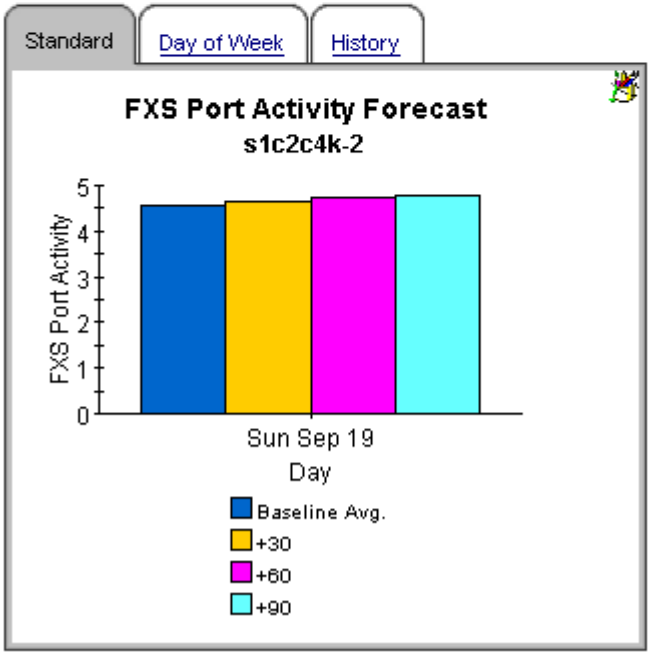
Gateway Name	Active Ports Baseline %	F30 Active Ports Rate %	F60 Active Ports Rate %	F90 Active Ports Rate %
s1c2c4k-2	59.2	55.4	53.0	50.6
s1c23600-2	56.6	55.7	55.1	54.6
s1c2c4k-1	56.2	55.7	55.4	55.1




Standard
Day of Week
History
PRI Channel Activity Forecast
s1c2c4k-2
PRI Channel Activity
40
32
24
16
8
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
CAS Channel Activity Forecast
s1c2c4k-2
CAS Channel Activity
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXO Port Activity Forecast
s1c2c4k-2
FXO Port Activity
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXS Port Activity Forecast
s1c2c4k-2
FXS Port Activity
5
4
3
2
1
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90

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Cisco IP Telephony Statistics

Gateway Forecast By Location

The Gateway Forecast By Location Report enables the user to quickly identify locations with the greatest projected increase in number of ports used. Drill down charts present forecasted overall port Statistics metrics for the selected gateway in a given location.

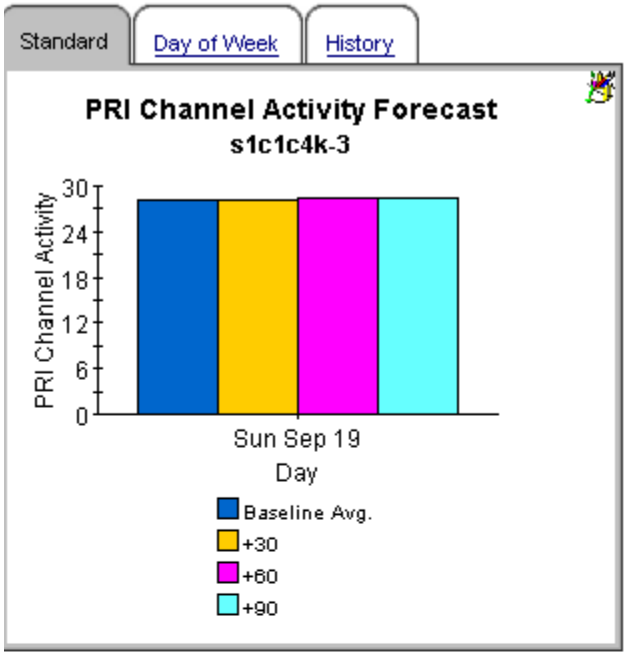
Location Selection Table

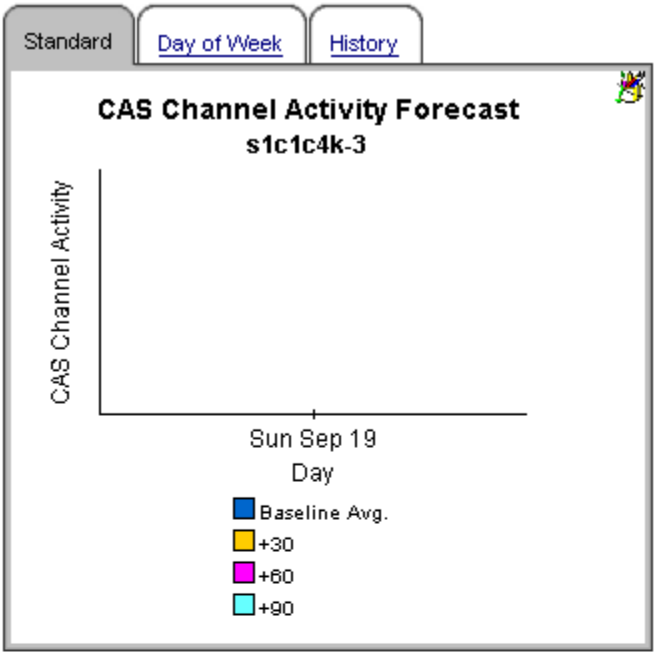
Location Name	Active Ports Baseline (%)	F30 Active Ports Rate (%)	F60 Active Ports Rate (%)	F90 Active Ports Rate (%)
All Locations	54.0	54.1	54.1	54.1
Cupertino	56.1	56.1	56.1	56.1
Reston	56.5	56.4	56.4	56.3

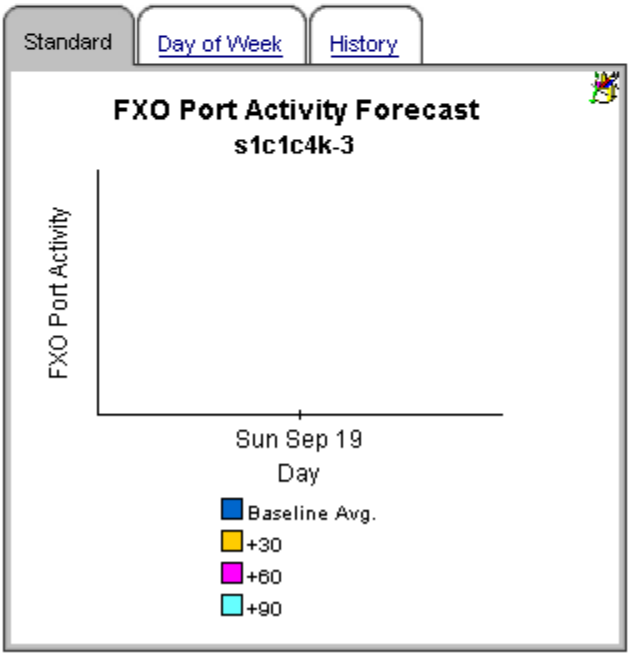
Gateway Selection Table

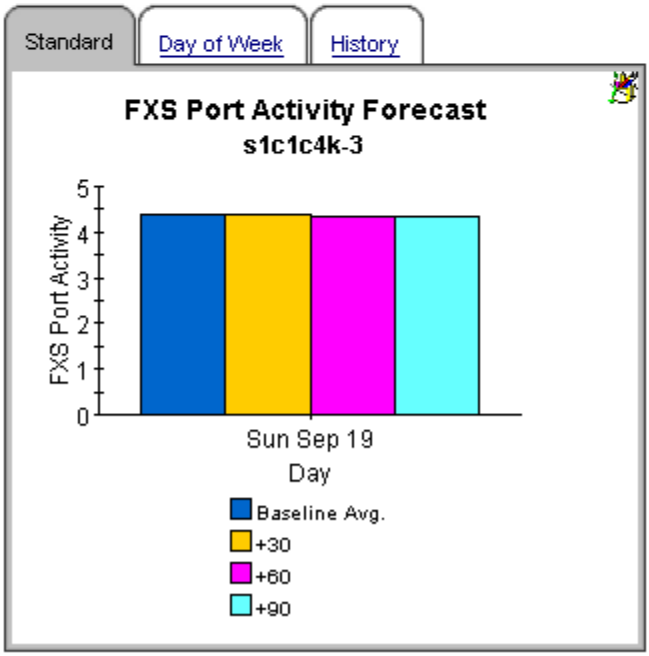
All Locations

Gateway	Active Ports Baseline (%)	F30 Active Ports Rate (%)	F60 Active Ports Rate (%)	F90 Active Ports Rate (%)
s1c1c4k-3	58.2	58.3	58.3	58.4
s1c1c4k-4	57.8	57.5	57.3	57.0
s1c1cat4k-1	57.7	57.9	58.0	58.2
s1c23600-2	56.8	56.8	56.8	56.9
s1c2c4k-1	56.2	55.7	55.3	55.0
s1c2c4k-2	59.8	59.2	58.8	58.4


Standard
Day of Week
History
PRI Channel Activity Forecast
s1c1c4k-3
PRI Channel Activity
30
24
18
12
6
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
CAS Channel Activity Forecast
s1c1c4k-3
CAS Channel Activity
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXO Port Activity Forecast
s1c1c4k-3
FXO Port Activity
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXS Port Activity Forecast
s1c1c4k-3
FXS Port Activity
5
4
3
2
1
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90

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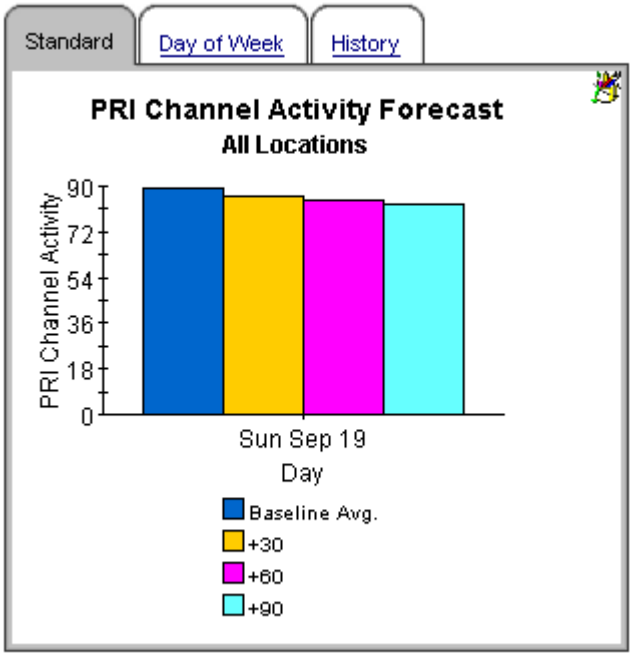
Cisco IP Telephony Statistics

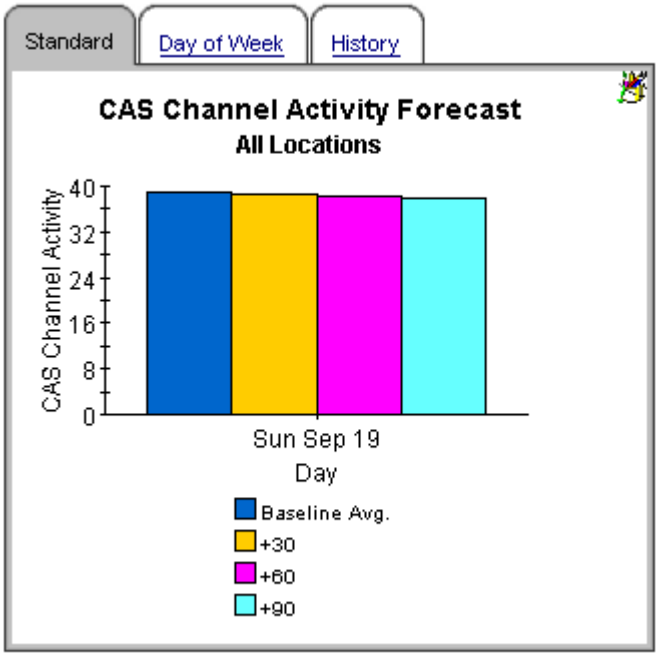
Location Forecast

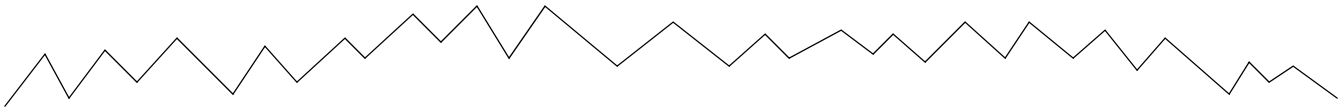
The Location Forecast Report enables the user to quickly identify locations with the greatest projected increase in number of ports used. The list of locations are sorted by rate of increase in number of ports used. Drill down charts present forecasted overall port Statistics metrics for the selected location.

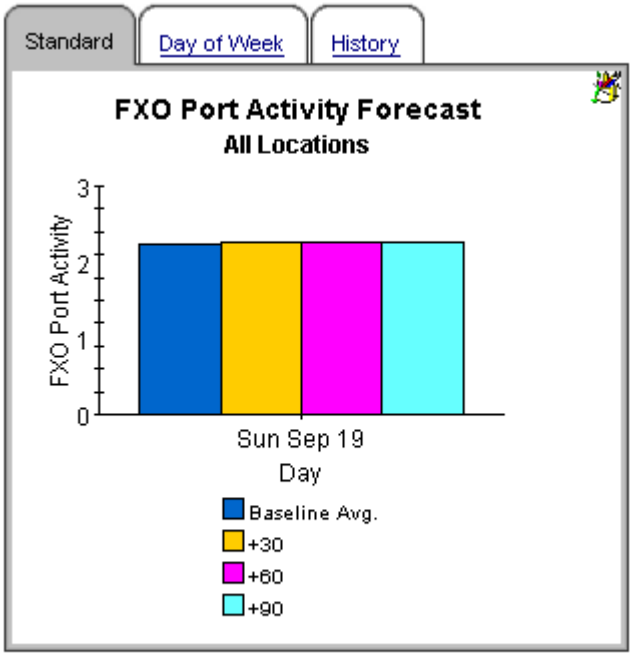
Location Selection Table

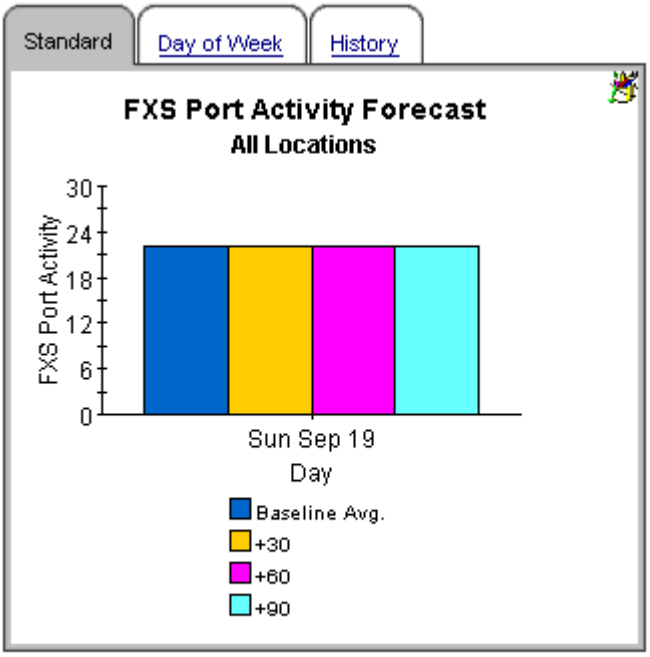
Location	Baseline (%)	+ 30/60/90 Days
All Locations	53.9	52.7 / 52. / 51.4
Cupertino	55.8	53.3 / 51.8 / 50.3
Reston	56.2	54.7 / 53.7 / 52.8








Standard
Day of Week
History
FXO Port Activity Forecast
All Locations
FXO Port Activity
3
2
1
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90


Standard
Day of Week
History
FXS Port Activity Forecast
All Locations
FXS Port Activity
30
24
18
12
6
0
Sun Sep 19
Day
Baseline Avg.
+30
+60
+90

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9 Correlation Reports

Correlation Reports allow you to compare:

- Peak utilization for CallManagers within the same cluster
- Busy hour utilization for CallManager within the same cluster
- DS1 usage on a location-by-location basis

These reports will help you see where utilization is not balanced. See below for samples of the following reports:

- CallManager Cluster Peak Utilization Correlation
- CallManager Cluster Busy Hour Utilization Correlation
- DS1 Usage Correlation by Location

Cisco IP Telephony Statistics

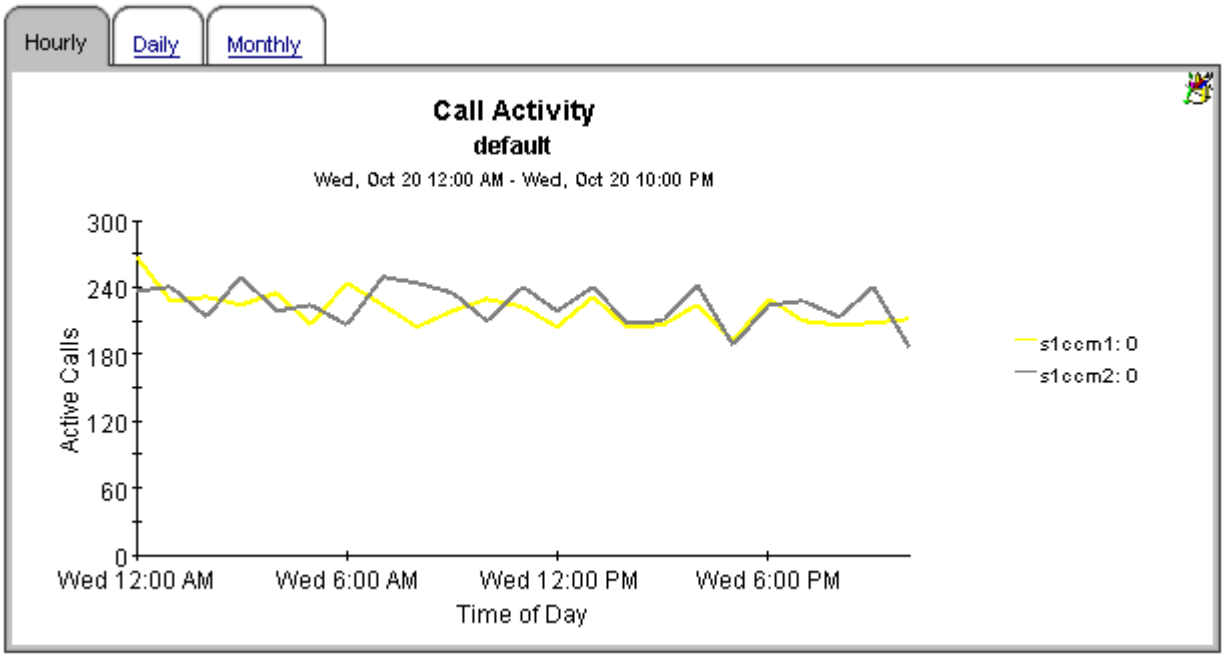
CallManager Cluster Peak Utilization Correlation

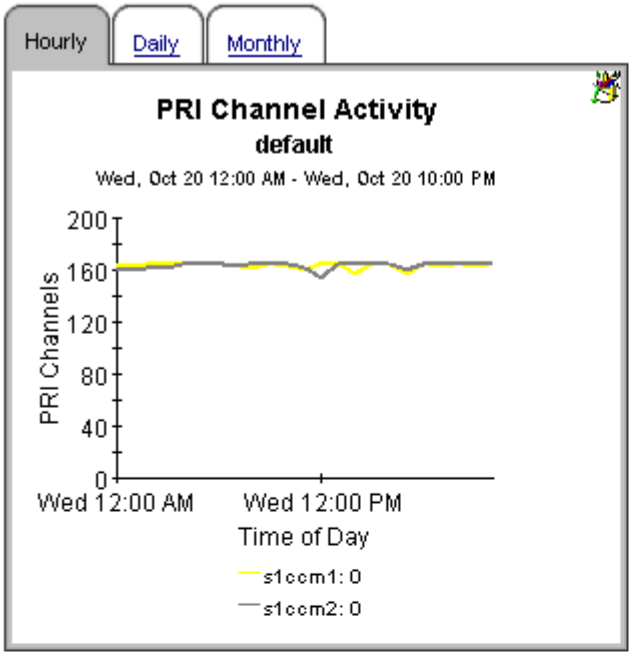
This report presents the peak utilization metrics for all the CallManagers that belong to a particular cluster. This would help in identifying imbalanced utilization of resources across the CallManagers in a given cluster.

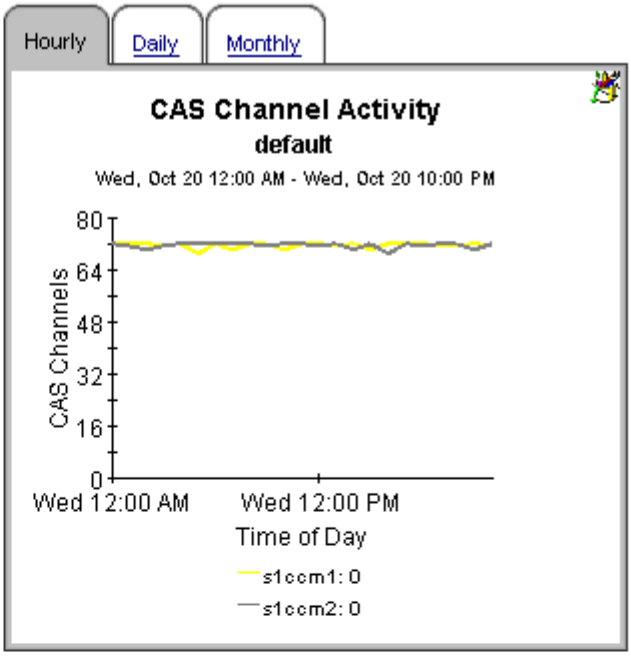
CallManager Cluster Selection Table

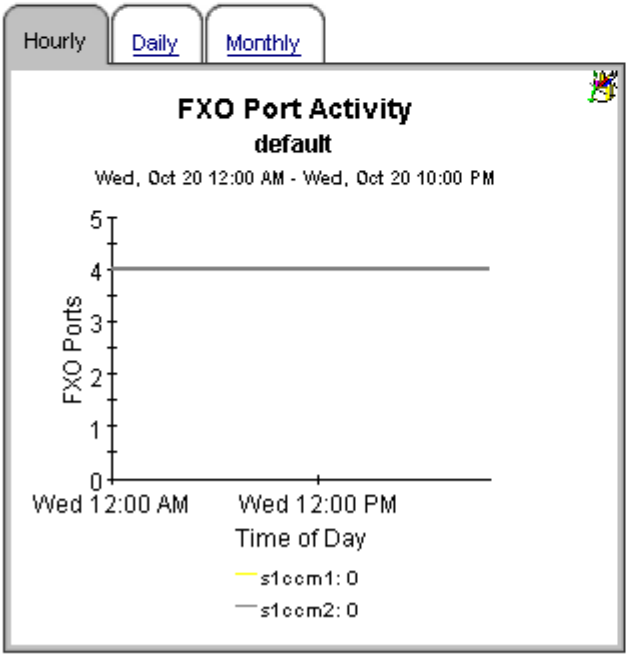
Wed, Oct 20, 2004

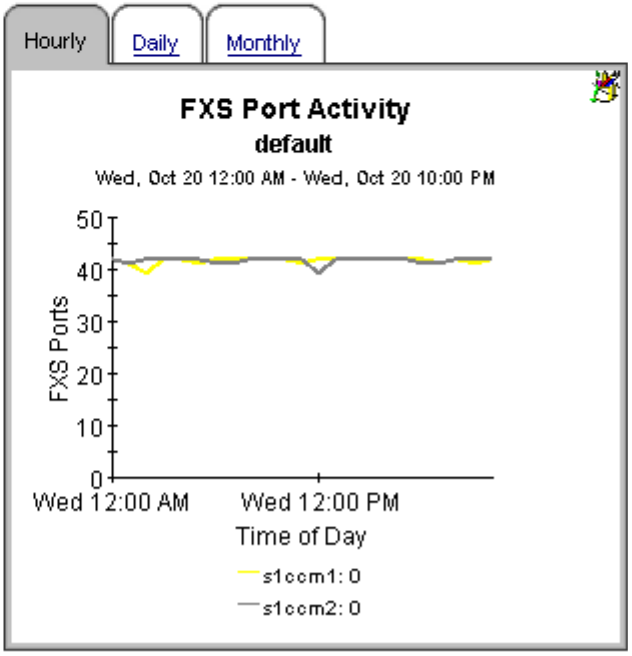
CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
default	241	330	177	144	79	8	4	84	46




Hourly
Daily
Monthly
PRI Channel Activity
default
Wed, Oct 20 12:00 AM - Wed, Oct 20 10:00 PM
PRI Channels
200
160
120
80
40
0
Wed 12:00 AM
Wed 12:00 PM
Time of Day
s1ccm1: 0
s1ccm2: 0


Hourly
Daily
Monthly
CAS Channel Activity
default
Wed, Oct 20 12:00 AM - Wed, Oct 20 10:00 PM
CAS Channels
80
64
48
32
16
0
Wed 12:00 AM
Wed 12:00 PM
Time of Day
s1ccm1: 0
s1ccm2: 0


Hourly
Daily
Monthly
FXO Port Activity
default
Wed, Oct 20 12:00 AM - Wed, Oct 20 10:00 PM
FXO Ports
5
4
3
2
1
0
Wed 12:00 AM
Wed 12:00 PM
Time of Day
s1ccm1: 0
s1ccm2: 0


Hourly
Daily
Monthly
FXS Port Activity
default
Wed, Oct 20 12:00 AM - Wed, Oct 20 10:00 PM
FXS Ports
50
40
30
20
10
0
Wed 12:00 AM
Wed 12:00 PM
Time of Day
s1ccm1: 0
s1ccm2: 0

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Cisco IP Telephony Statistics

CallManager Cluster Busy Hour Utilization Correlation

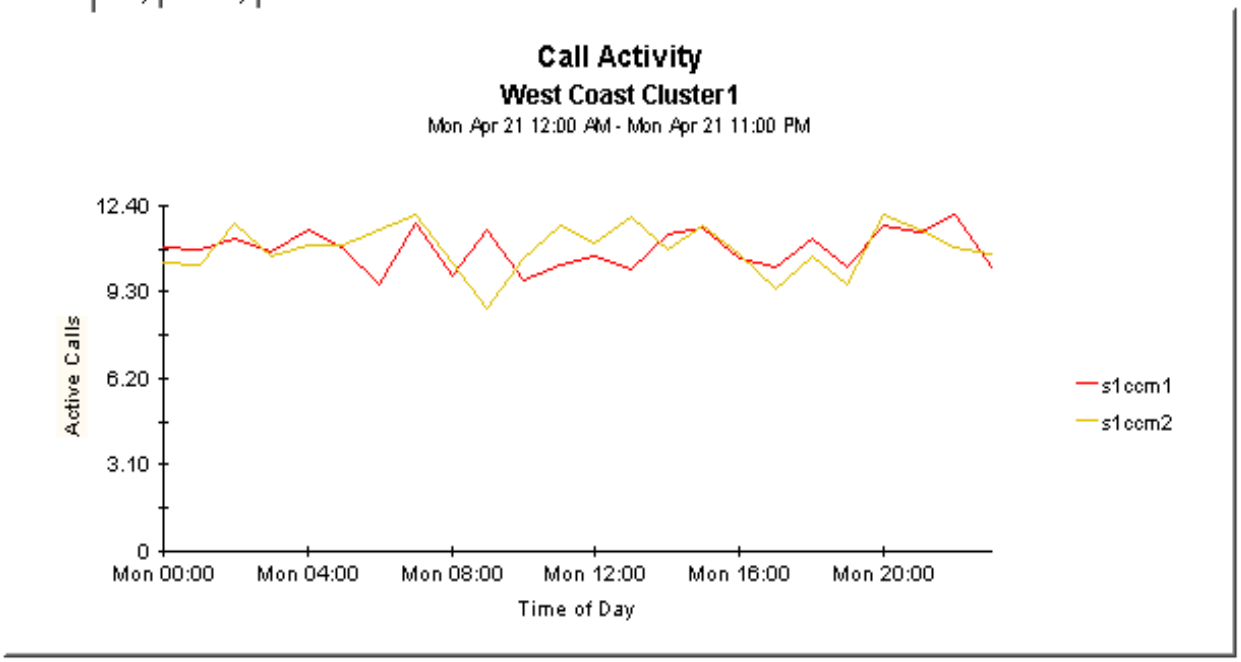
This report presents the busy hour utilization metrics for all the CallManagers that belong to a particular cluster. This would help in identifying imbalanced utilization of resources across the CallManagers in a given cluster.

CallManager Cluster Selection Table

Mon Apr 21 2003

CallManager Cluster Name	Busy Hour Calls	Total PRI Channels	Busy Hour Active PRI	Total CAS Channels	Busy Hour Active CAS	Total FXO Ports	Busy Hour Active FXO	Total FXS Ports	Busy Hour Active FXS
West Coast Cluster1	24	0	0	0	0	12	7	36	21
East Coast Cluster1	38	24	14	24	14	6	4	36	19

Hourly | Daily | Monthly



Cisco IP Telephony Statistics

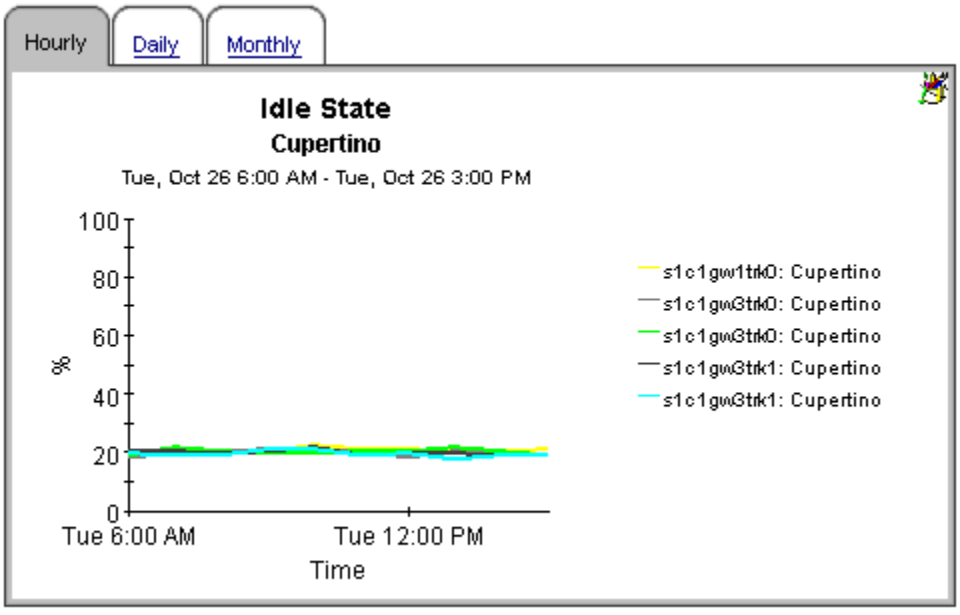
DS1 Usage Correlation By Location

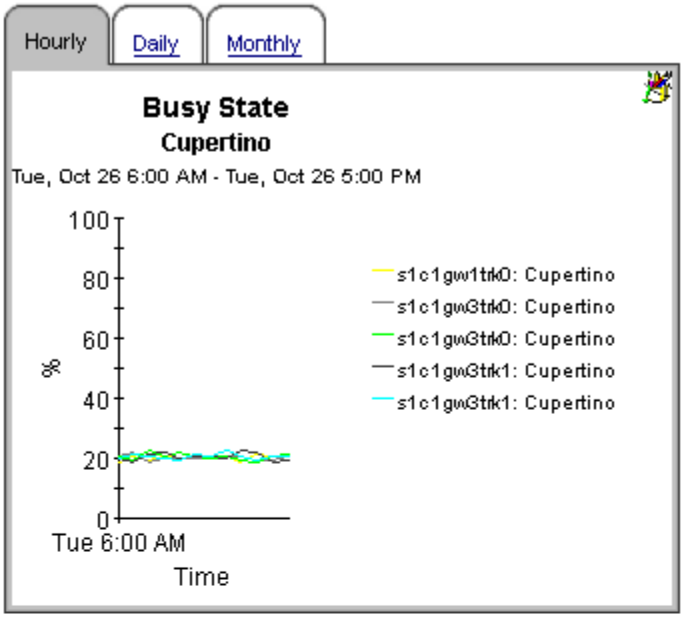
The DS1 Usage Correlation By Location Report presents the usage metrics for the individual DS1(s) that belong to a given location. This can be used to identify imbalanced usage of the T1/E1 lines.

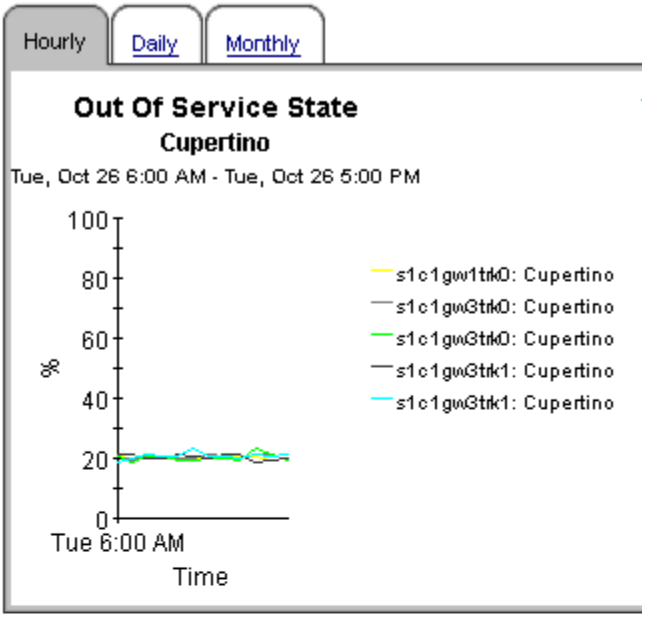
Location Selection Table

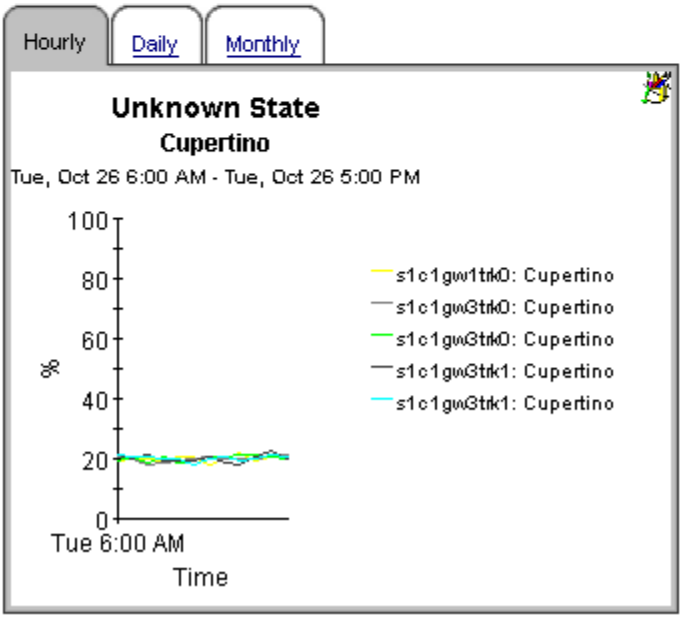
Tue, Oct 26, 2004

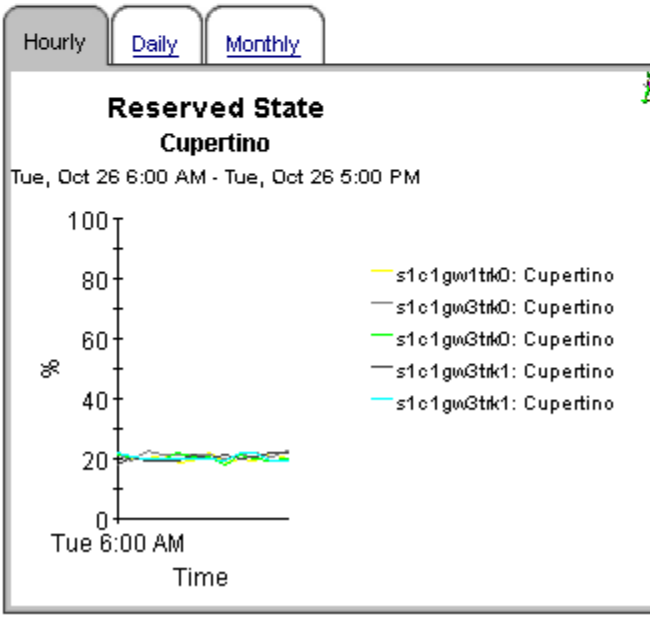
Location	% Busy State	% Idle State	% Out Of Service State	% Reserved State	% Unknown State
Cupertino	20	20	20	20	20
Reston	20	20	20	20	20




Hourly
Daily
Monthly
Busy State
Cupertino
Tue, Oct 26 6:00 AM - Tue, Oct 26 5:00 PM
100
80
60
40
20
0
%
Tue 6:00 AM
Time
s1c1gw1trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk1: Cupertino
s1c1gw3trk1: Cupertino


Hourly
Daily
Monthly
Out Of Service State
Cupertino
Tue, Oct 26 6:00 AM - Tue, Oct 26 5:00 PM
100
80
60
40
20
0
%
Tue 6:00 AM
Time
s1c1gw1trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk1: Cupertino
s1c1gw3trk1: Cupertino


Hourly
Daily
Monthly
Unknown State
Cupertino
Tue, Oct 26 6:00 AM - Tue, Oct 26 5:00 PM
100
80
60
40
20
0
%
Tue 6:00 AM
Time
s1c1gw1trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk1: Cupertino
s1c1gw3trk1: Cupertino


Hourly
Daily
Monthly
Reserved State
Cupertino
Tue, Oct 26 6:00 AM - Tue, Oct 26 5:00 PM
100
80
60
40
20
0
%
Tue 6:00 AM
Time
s1c1gw1trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk0: Cupertino
s1c1gw3trk1: Cupertino
s1c1gw3trk1: Cupertino

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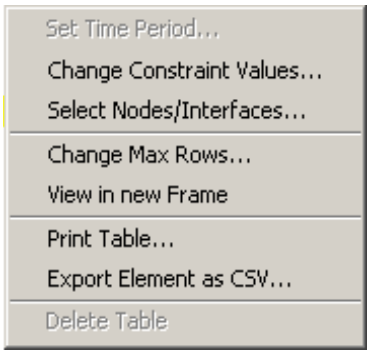
A Editing Tables and Graphs

Any table or graph can be viewed in several ways. While the default view is usually adequate, you can easily change to a different view. If you are using Report Viewer, right-click the object to open a list of view options. If you are using the Web Access Server, follow these steps to change the default view of a table or graph:

1. Click **Preferences** on the links bar.
2. Expand **Reports** in the navigation frame.
3. Click **Viewing**.
4. Select the **Allow element editing** box.
5. Click **Apply**.
6. Click the Edit icon next to the table or graph.

View Options for Tables

Right-clicking a table, or selecting the Edit Table icon if you are using the Web Access Server, opens a list of table view options.



Select **Set Time Period** to alter the relative time period (relative to now) or set an absolute time period. The Set Time Period window opens.

You may shorten the period of time covered by the table from, for example, 42 days to 30 days or to 7 days. If you are interested in a specific period of time that starts in the past and stops *before* yesterday, click **Use Absolute Time** and select a Start Time and an End Time.

Select **Change Constraint Values** to loosen or tighten a constraint, thereby raising or lowering the number of elements that conform to the constraint. The Change Constraint Values window opens. To loosen a constraint, set the value lower; to tighten a constraint, set the value higher.

The **Select Nodes/Interfaces** allows you to change the scope of the table by limiting the table to specific nodes, specific interfaces, or a specific group of nodes or interfaces. The Select Node Selection Type window opens.

Change Max Rows increases or decreases the number of rows in a table. The default is 50. If you expand the default, the table may take more time to open. If you are trending a large network, using the default ensures that the table opens as quickly as possible.

View in new Frame opens the table in a Table Viewer window, shown below. If necessary, make the data in the table more legible by resizing the window.

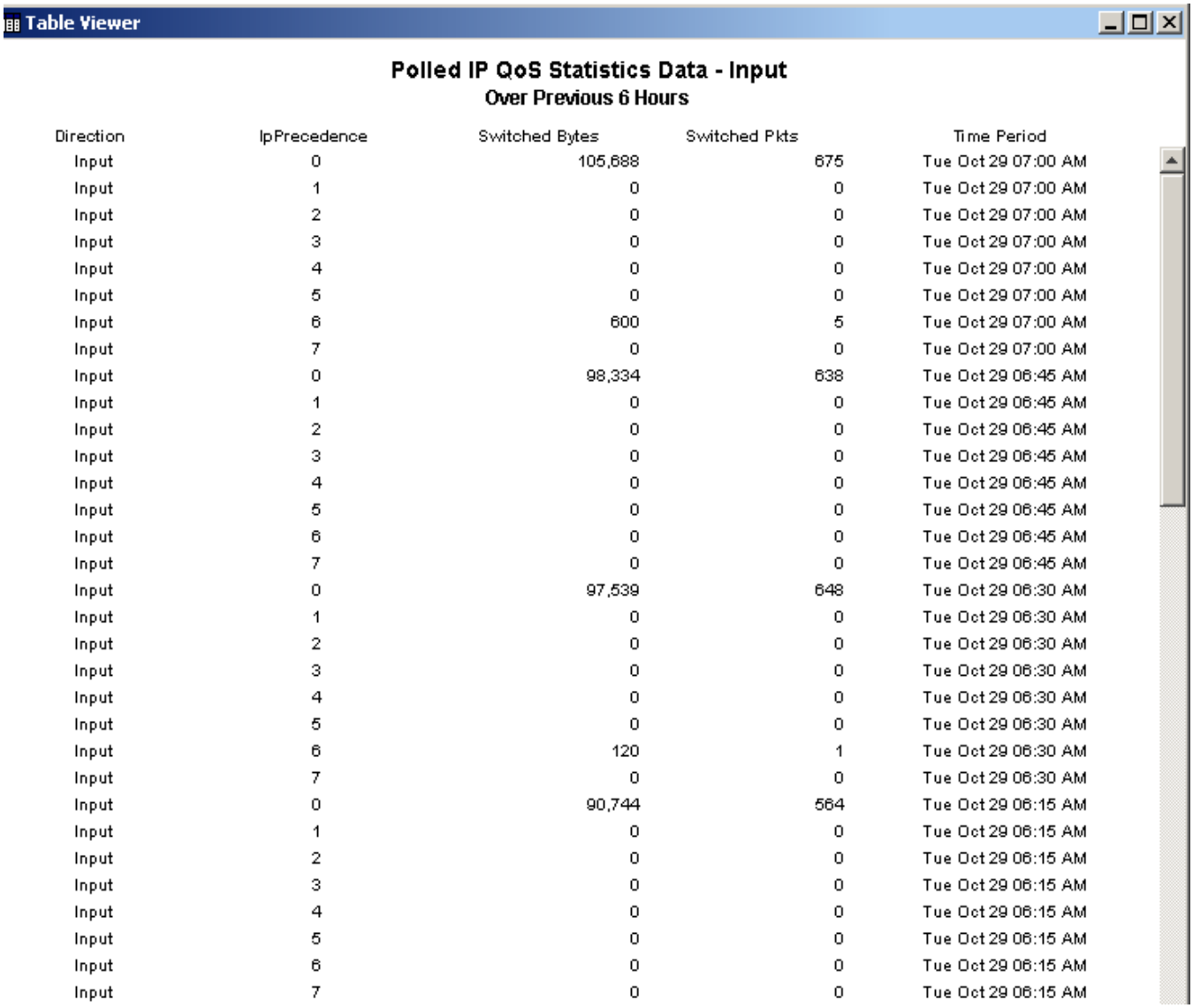


Table Viewer

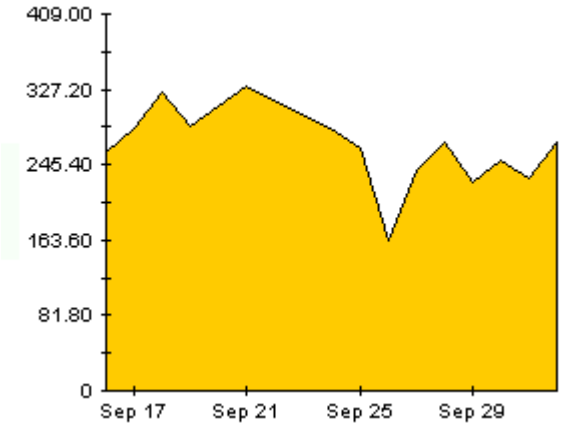
Polled IP QoS Statistics Data - Input

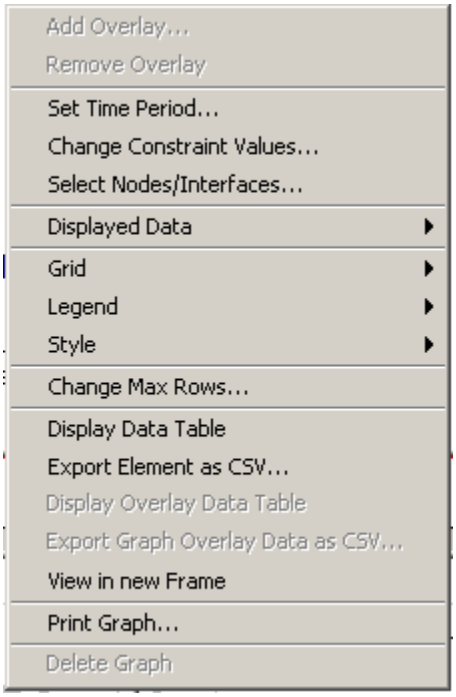
Over Previous 6 Hours

Direction	IpPrecedence	Switched Bytes	Switched Pkts	Time Period
Input	0	105,688	675	Tue Oct 29 07:00 AM
Input	1	0	0	Tue Oct 29 07:00 AM
Input	2	0	0	Tue Oct 29 07:00 AM
Input	3	0	0	Tue Oct 29 07:00 AM
Input	4	0	0	Tue Oct 29 07:00 AM
Input	5	0	0	Tue Oct 29 07:00 AM
Input	6	600	5	Tue Oct 29 07:00 AM
Input	7	0	0	Tue Oct 29 07:00 AM
Input	0	98,334	638	Tue Oct 29 06:45 AM
Input	1	0	0	Tue Oct 29 06:45 AM
Input	2	0	0	Tue Oct 29 06:45 AM
Input	3	0	0	Tue Oct 29 06:45 AM
Input	4	0	0	Tue Oct 29 06:45 AM
Input	5	0	0	Tue Oct 29 06:45 AM
Input	6	0	0	Tue Oct 29 06:45 AM
Input	7	0	0	Tue Oct 29 06:45 AM
Input	0	97,539	648	Tue Oct 29 06:30 AM
Input	1	0	0	Tue Oct 29 06:30 AM
Input	2	0	0	Tue Oct 29 06:30 AM
Input	3	0	0	Tue Oct 29 06:30 AM
Input	4	0	0	Tue Oct 29 06:30 AM
Input	5	0	0	Tue Oct 29 06:30 AM
Input	6	120	1	Tue Oct 29 06:30 AM
Input	7	0	0	Tue Oct 29 06:30 AM
Input	0	90,744	564	Tue Oct 29 06:15 AM
Input	1	0	0	Tue Oct 29 06:15 AM
Input	2	0	0	Tue Oct 29 06:15 AM
Input	3	0	0	Tue Oct 29 06:15 AM
Input	4	0	0	Tue Oct 29 06:15 AM
Input	5	0	0	Tue Oct 29 06:15 AM
Input	6	0	0	Tue Oct 29 06:15 AM
Input	7	0	0	Tue Oct 29 06:15 AM

View Options for Graphs

Right-clicking a graph, or clicking the Edit Graph icon if you are using the Web Access Server, opens the following list of view options.





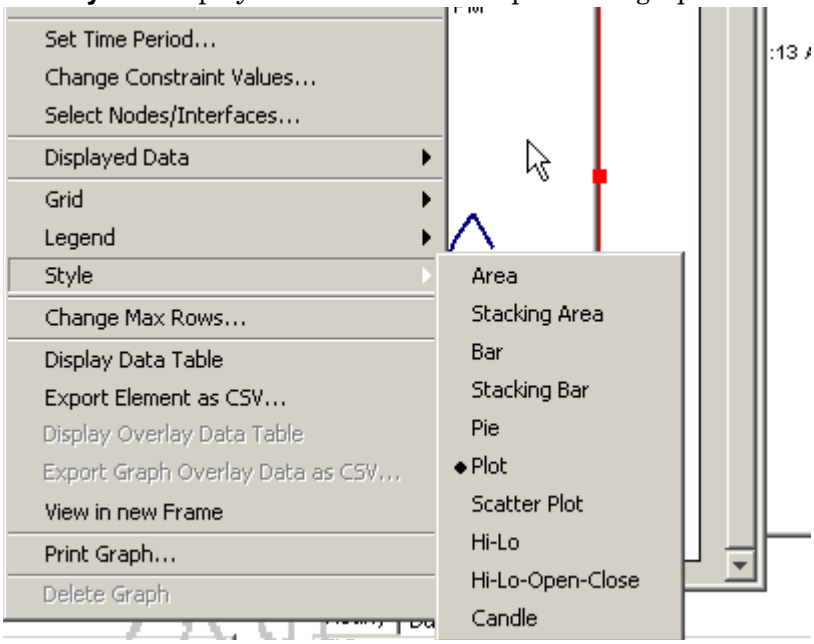
The following table provides details about each option.

Option	**Function**
Set Time Period	Same as the table option shown above.
Change Constraint Values	Same as the table option shown above.
Select Nodes/Interfaces	Same as the table option shown above.
Displayed Data	For every point on a graph, display data in a spreadsheet.
Grid	Add these to the graph: X axis grid lines Y axis grid lines X and Y axis grid lines
Legend	Delete or reposition the legend.
Style	See the illustrations below.
Change Max Rows...	Same as the table option shown above.
Display Data Table	See below.

Option	Function
Export Element as CSV...	Same as the table option shown above.
View in New Frame	Opens graph in a Graph Viewer window.
Print Graph	Same as the table option shown above.

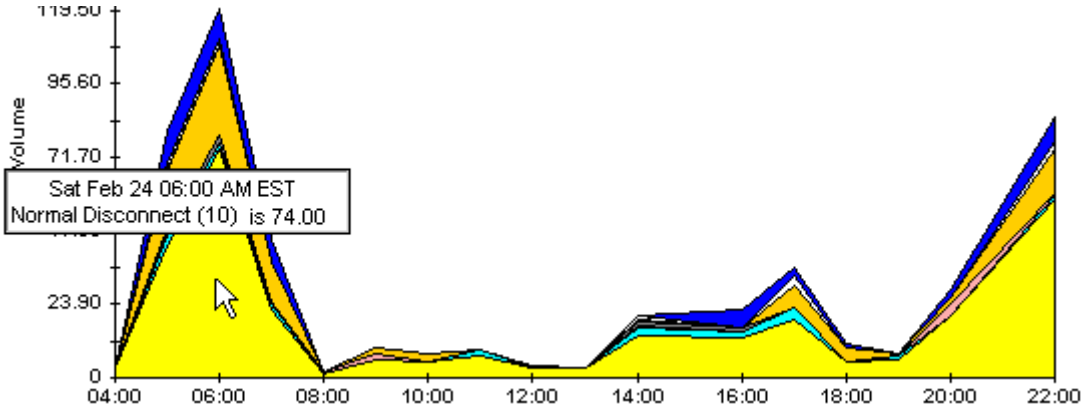
Style Options

Select **Style** to display a list of seven view options for graphs.



Style > Area

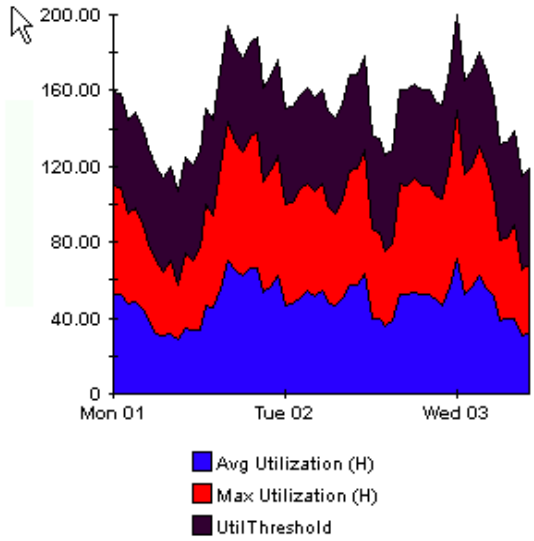
The plot or bar chart changes to an area graph. While relative values and total values are easy to view in this format, absolute values for smaller data types may be hard to see. Click anywhere within a band of color to display the exact value for that location



To shorten the time span of a graph, press SHIFT+ALT and use the left mouse button to highlight the time span you want to focus on. Release the mouse button to display the selected time span.

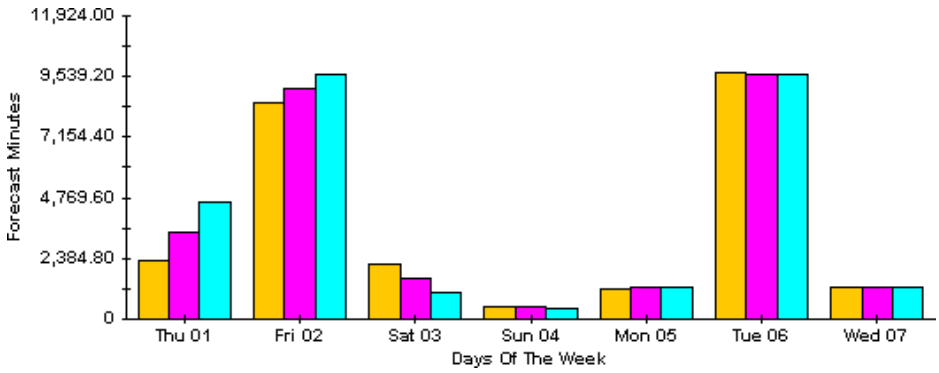
Style > Stacking Area

The area or plot graph changes to a stacking area graph. This view is suitable for displaying a small number of variables.



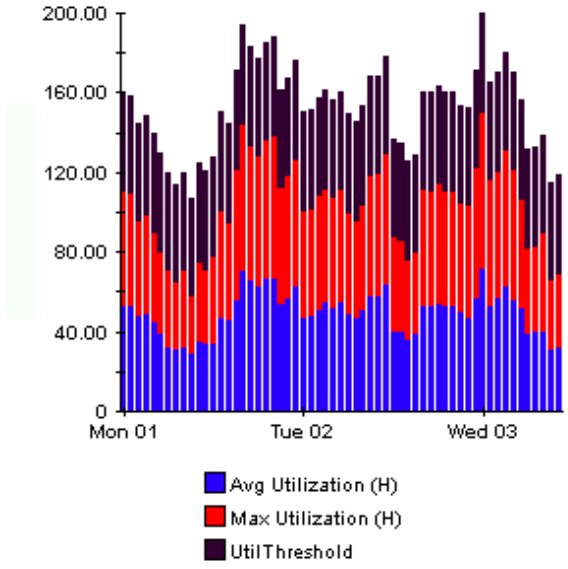
Style > Bar

The graph changes to a bar chart. This view is suitable for displaying relatively equal values for a small number of variables. There are three variables in the graph below.



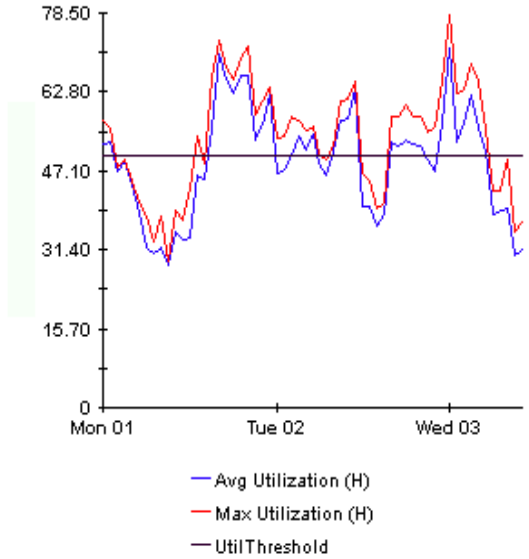
Style > Stacking Bar

The plot or area graph changes to a stacking bar chart. If you increase the width of the frame, the time scale becomes hourly. If you increase the height of the frame, the call volume shows in units of ten.



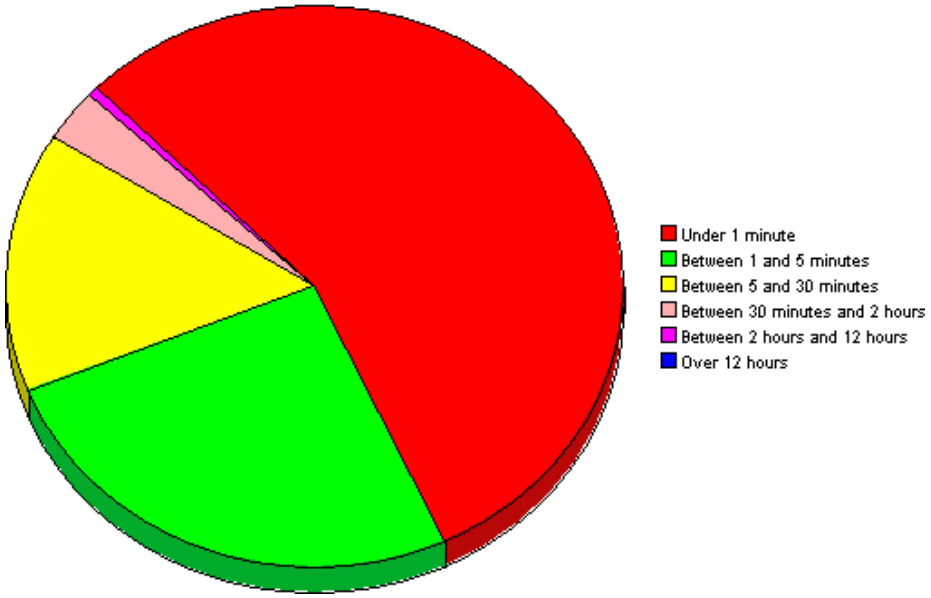
Style > Plot

Bands of color in an area graph change to lines. If you adjust the frame width, you can make the data points align with hour; if you adjust the frame height, you can turn call volume into whole numbers.



Style > Pie

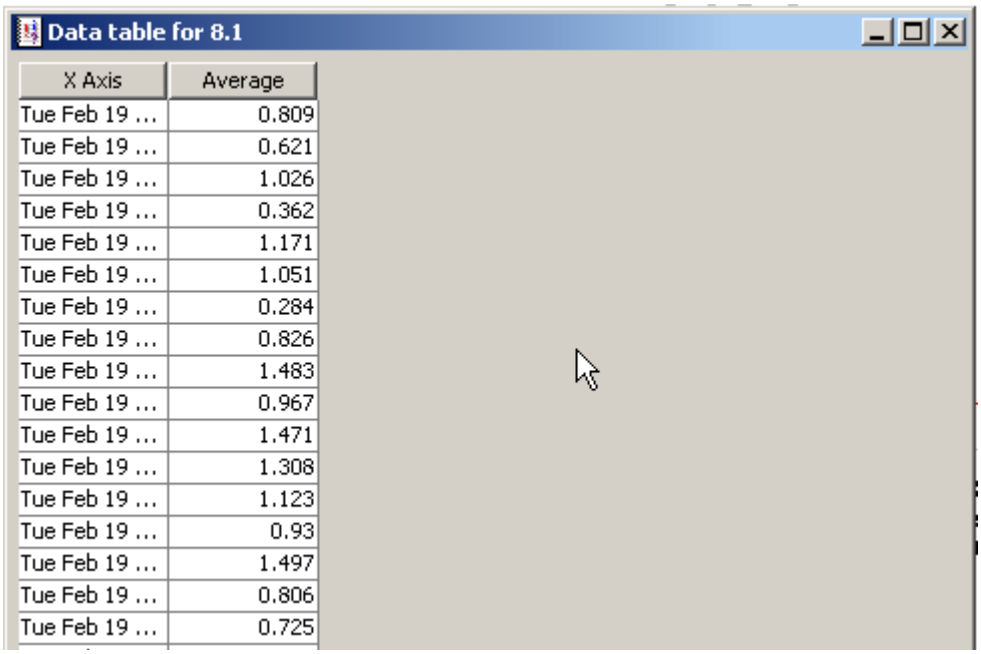
An area graph becomes a pie chart. Bands in an area graph convert to slices of a pie and the pie constitutes a 24-hour period. This view is helpful when a small number of data values are represented and you are looking at data for one day.



If you are looking at data for more than one day, you will see multiple pie graphs, one for each day.

Display Data Table

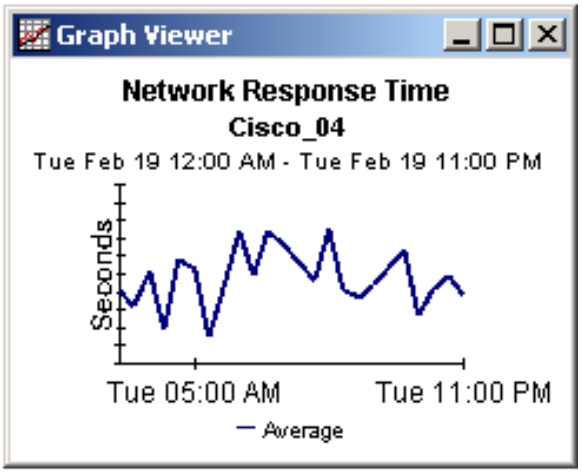
This option changes a graph into a spreadsheet.



X Axis	Average
Tue Feb 19 ...	0.809
Tue Feb 19 ...	0.621
Tue Feb 19 ...	1.026
Tue Feb 19 ...	0.362
Tue Feb 19 ...	1.171
Tue Feb 19 ...	1.051
Tue Feb 19 ...	0.284
Tue Feb 19 ...	0.826
Tue Feb 19 ...	1.483
Tue Feb 19 ...	0.967
Tue Feb 19 ...	1.471
Tue Feb 19 ...	1.308
Tue Feb 19 ...	1.123
Tue Feb 19 ...	0.93
Tue Feb 19 ...	1.497
Tue Feb 19 ...	0.806
Tue Feb 19 ...	0.725

View in New Frame

The graph opens in a Graph Viewer window. Improve legibility by resizing the window.



Glossary

active ports rate

A measure of the percentage of total active channels/ports divided by the total channels/ports.

baseline average

The average of all samples during the baseline period. The baseline period is a rolling period comprising the previous 91 days

busy hour

Busy hour is the maximum hourly average for the day. This value is the basis for calculating future performance. Unlike the average for the day, this value does not smooth out daily peaks and valleys. In addition, unlike the daily maximum, or peak, and the daily minimum, this value represents a relatively persistent phenomenon, not a momentary condition. Since busy hour is an average, actual utilization could have been well above the average for a portion of that particular hour, as well as well below the average for a portion of that particular hour.

Cisco IP Telephony Statistics calculates a busy hour for the following metrics:

- Number of calls
- Active PRI channels
- Active CAS channels
- Active FXO ports
- Active FXS ports

CallManager

A Cisco AVVID IP Telephony service whose primary function is the control and routing of calls from voice-enabled IP devices.

CAS

Channel Associated Signaling. A scheme for transmission of call signaling information that relies on interleaving the call signaling within the media information that the interface transmits.

channel name

The concatenation of DS1Name and Channel Index.

daily

Performance over the preceding 30 days for the following metrics:

- PRI channel activity
- CAS channel activity
- FXO port activity
- FXS port activity

The most recent day in this view is yesterday.

day of week

A forecast, derived from baseline data, that correlates growth rate to each day of the week.

F30, F60, F90

The level where utilization is expected to be 30, 60, and 90 days from now. Calculated by applying linear regression to busy-hour levels over the baseline period.

FXO

Foreign Exchange Office. A VoIP gateway providing analog access to central office's line termination.

FXS

Foreign Exchange Station. A VoIP gateway providing analog to a Plain Old Telephone Service (POTS) station.

gateway

A device that provides real-time, two-way communications between the packet-based network and other stations on a switched network.

growth rate

Also known as rate of increase. F30 utilization divided by average busy-hour utilization.

hourly

A view of yesterday's performance for the following metrics:

- PRI channel activity
- CAS channel activity
- FXO port activity
- FXS port activity

location

The place where gateways are located. Value imported by the Common Property Tables provisioning process. If not provisioned, field reads *unassigned*.

PRI

Primary Rate Interface. An ISDN interface containing 24 or 32 channels for the communication of media and signaling information.

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